MERCIA WASTE MANAGEMENT
ENVIRECOVER
SCHEDULE 20E - PROJECT SUPPORT INFORMATION (PART 2)
DISCLOSED DATA

Document Production & Approval Record

ISSUE NO. 7	NAME	SIGNATURE	POSITION	DATE
Prepared by:	[redacted]	[redacted]	Senior Consultant	14/05/2014
Checked by:	[redacted]	[redacted]	Engineering Director	14/05/2014

Document Revision Record

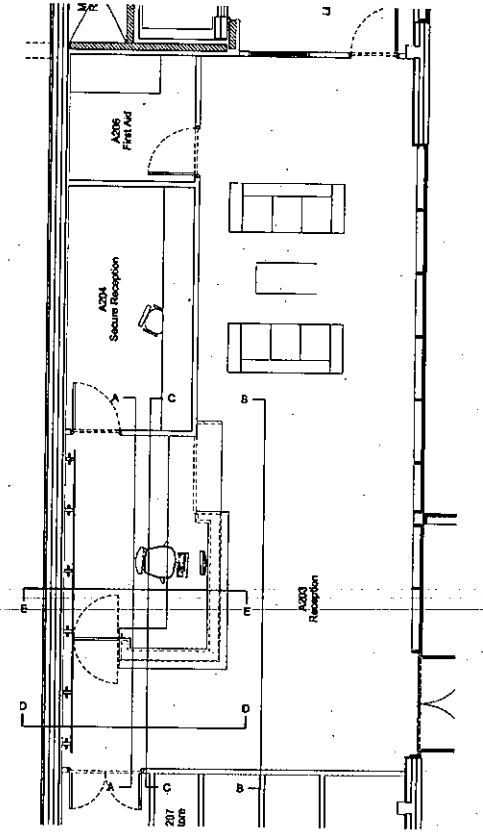
ISSUE NO.	DATE	DETAILS OF REVISIONS
1	16/08/2010	Draft issued for comment.
2	20/10/2010	Updated incorporating MWM's comments.
3	05/04/2012	Updated for BAFO issue
4	18/04/2012	Updated to include Hill & Moor Environmental Permit
5	17/01/2014	Updated for final Contractor proposal
6	31/03/2014	Assigned new tracker number. No changes to document.
7	13/05/2014	66kV Electrical compound layout drawing removed since it is now an appendix to schedule 20C. Laydown area lease included as Purchaser Provided Information in schedule 20E Part 1, therefore removed from Part 2. Drillers logs removed as these are included in the Site Investigation Report. Referenced drawings incorporated into main document.

TABLE OF CONTENTS

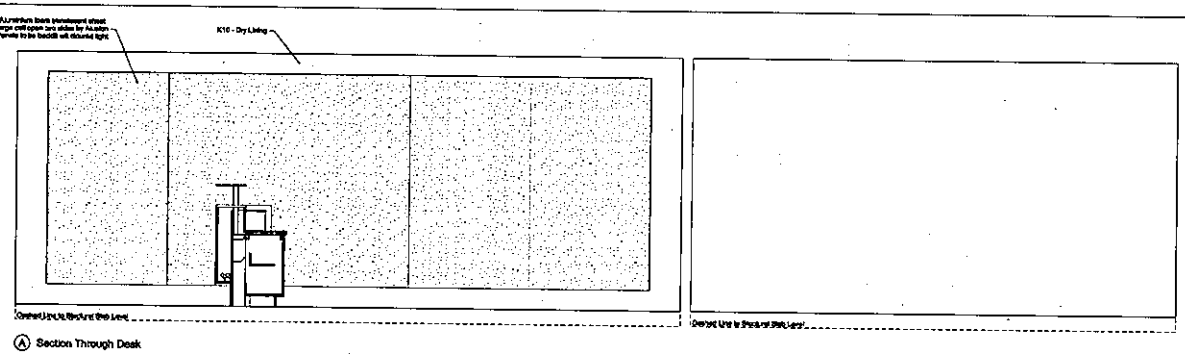
1 DISCLOSED DATA

The Contractor will take into account all the information provided by the Purchaser included within this Schedule. The information included in this Schedule is Disclosed Data, which may be varied as appropriate to enable the development of the works. It is acknowledged that all parties have had ample opportunity prior to Contract award to review and familiarise themselves with the content of these documents, addressing any such significant errors or inconsistencies at this time.

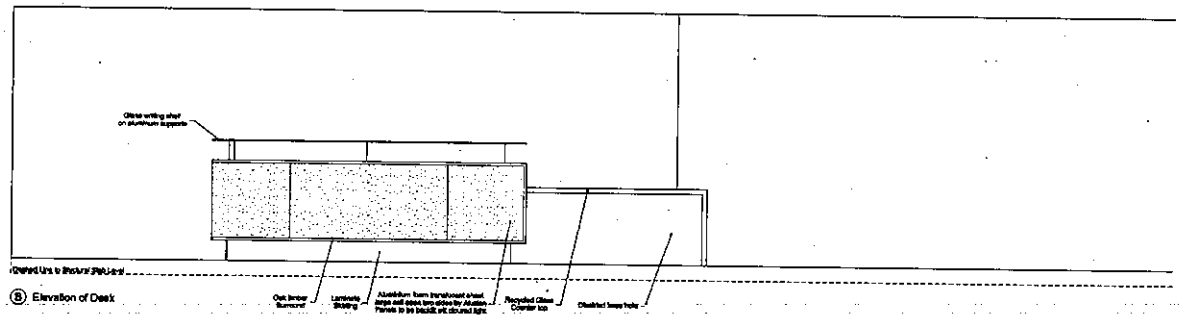
Appendix A – Architects Drawings



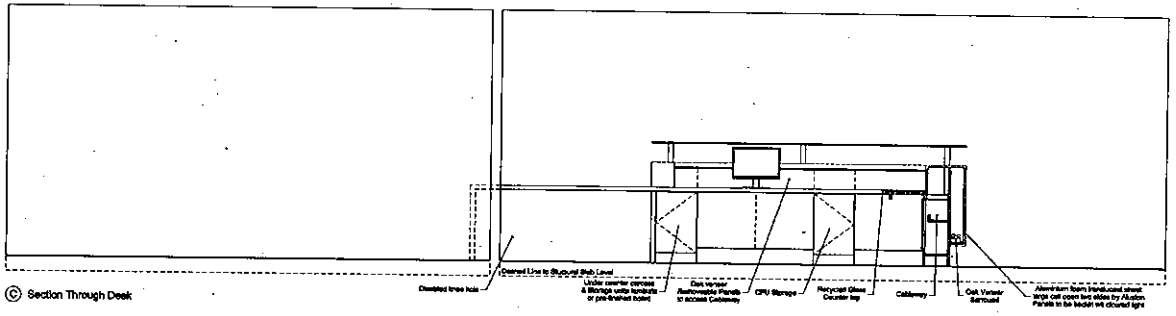
(F) Plan of Reception



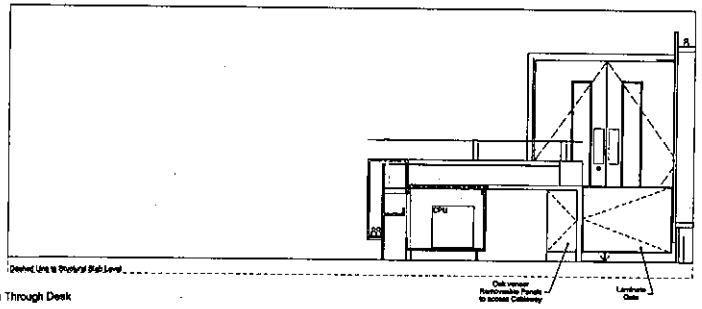
(A) Section Through Desk



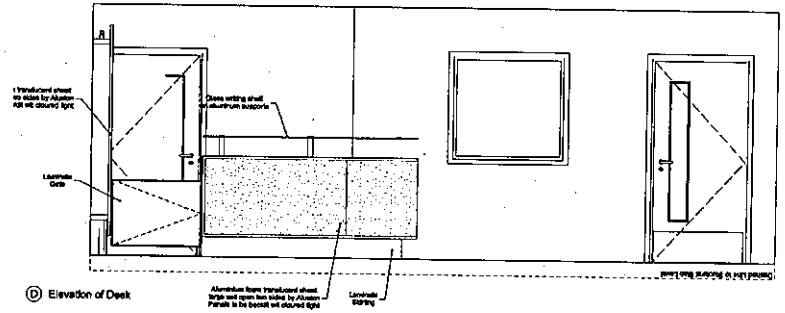
(B) Elevation of Desk



(C) Section Through Desk



(E) Section Through Desk



(D) Elevation of Desk

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STATED.
3. WHERE ANY DISCREPANCIES ARE FOUND WITHIN THE DRAWINGS THEY MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN THIS DRAWING OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKES PRECEDENCE.

FOR INFORMATION

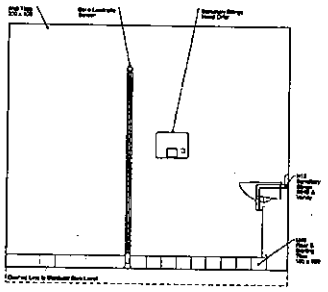
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

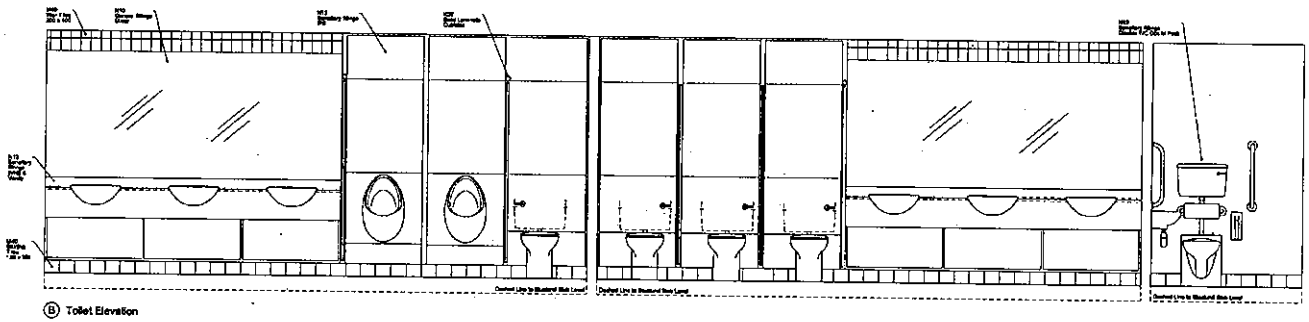
Reception Desk Plan Elevations & Section

1:50 1:25 06.10.10

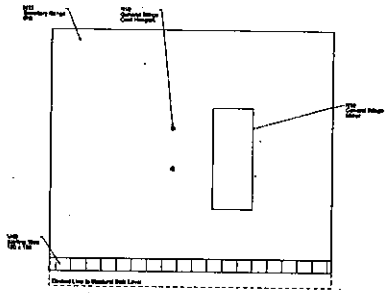
1204-EL504



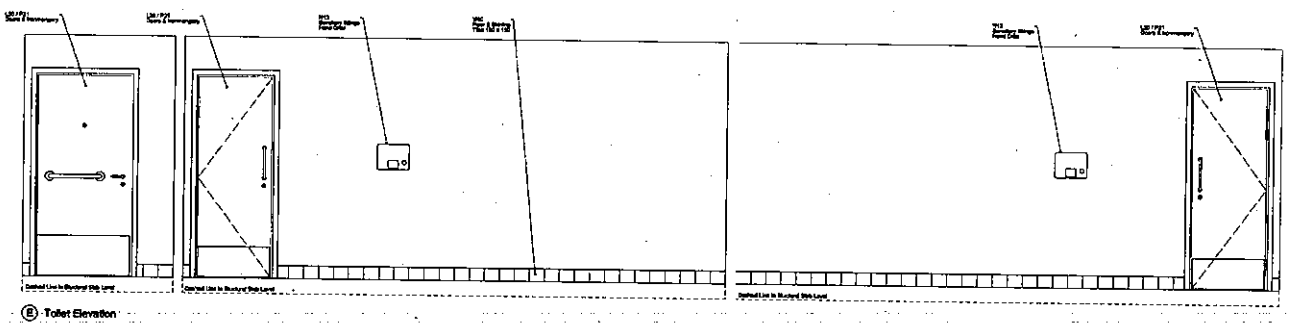
Ⓐ Toilet Elevation



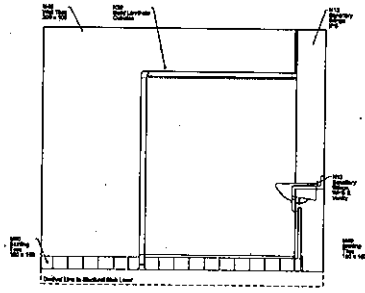
Ⓑ Toilet Elevation



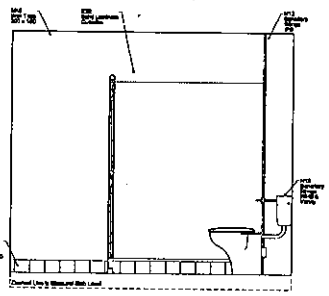
Ⓒ Disabled Toilet Elevation



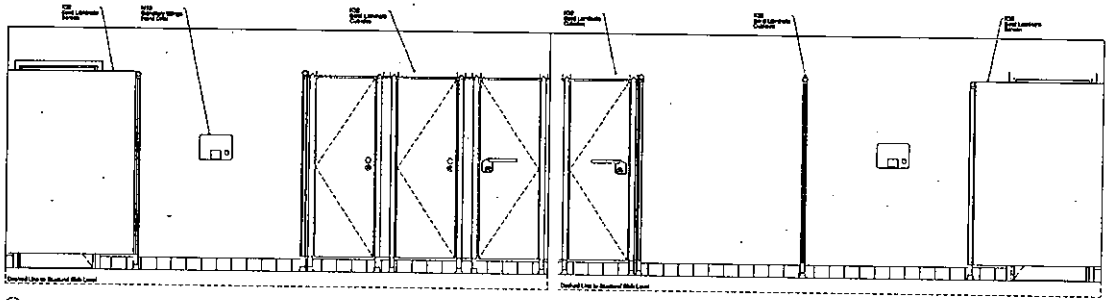
Ⓔ Toilet Elevation



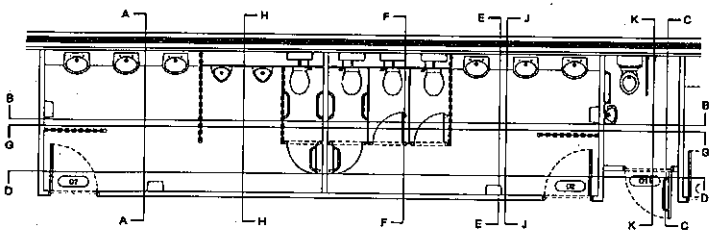
Ⓔ Toilet Elevation



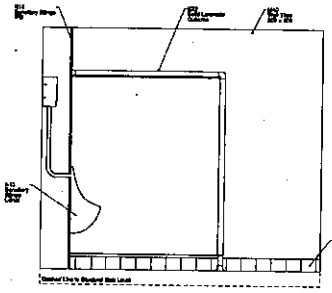
Ⓕ Toilet Elevation



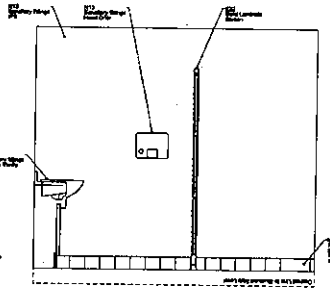
Ⓖ Toilet Elevation



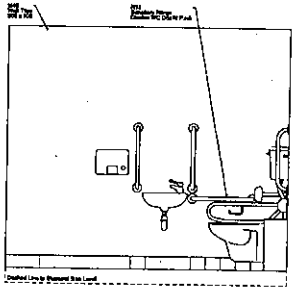
Ⓛ Third & Fourth Floor
Toilet Plan Scale 1:50



Ⓗ Toilet Elevation



Ⓙ Toilet Elevation



Ⓚ Disabled Toilet Elevation

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DRAWINGS THESE MUST BE REPORTED TO THE ARCHITECT OR ENGINEER FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

FOR INFORMATION

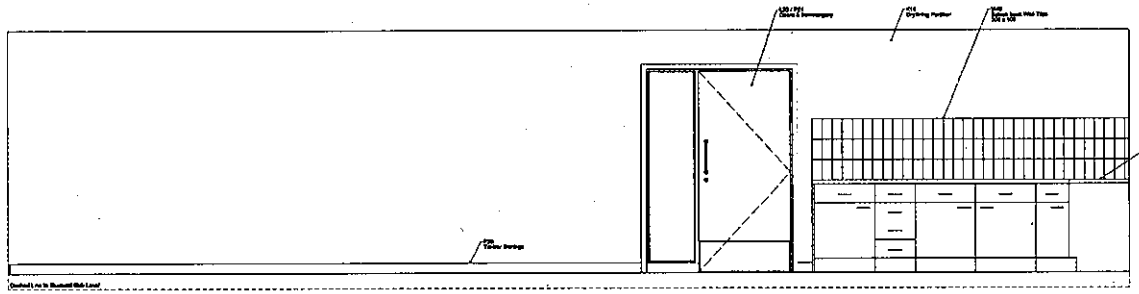
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

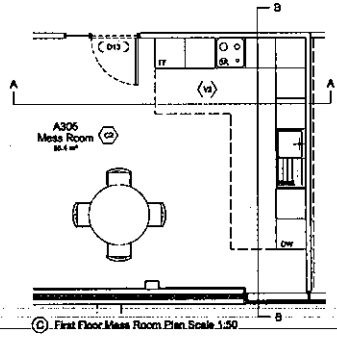
WC Elevations
Third & Fourth Floor

1:25 @ A1 06.10.10

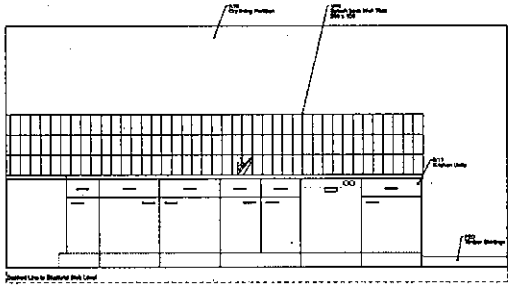
1204-EL503 4



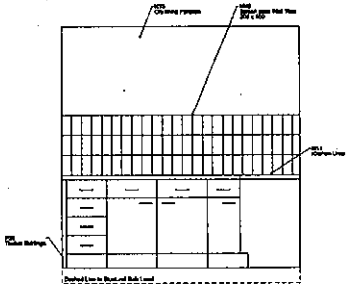
Ⓐ Elevation of Mess Room



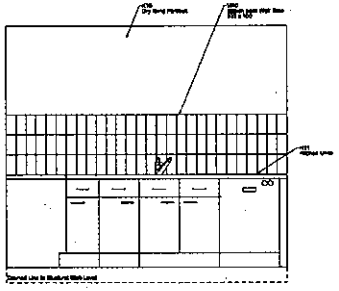
Ⓒ First Floor Mess Room Plan Scale 1:50



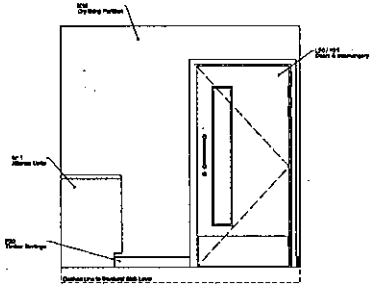
Ⓑ Elevation of Mess Room



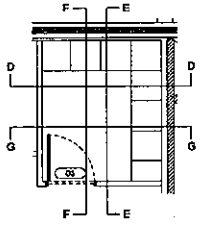
Ⓓ Elevation of Kitchen



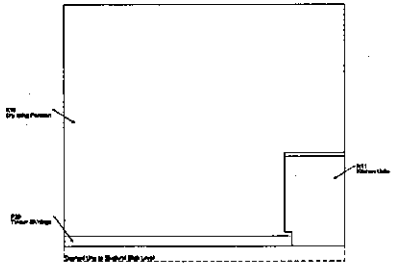
Ⓔ Elevation of Kitchen



Ⓕ Elevation of Kitchen



Ⓗ Third & Fourth Floor Kitchen Plan Scale 1:50



Ⓖ Elevation of Kitchen

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING BUT CHECK ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH ANY WORK.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER IS TO TAKE PRECEDENCE.

FOR INFORMATION

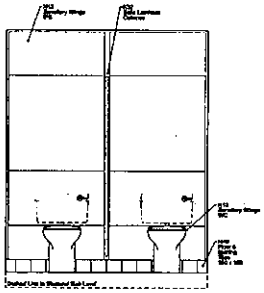
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

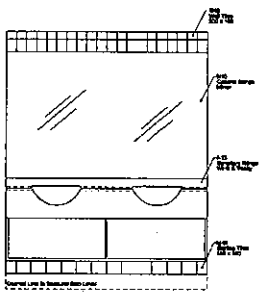
Mess Room Elevations First, Third & Fourth Floors

1:50 1:25 06.10.10

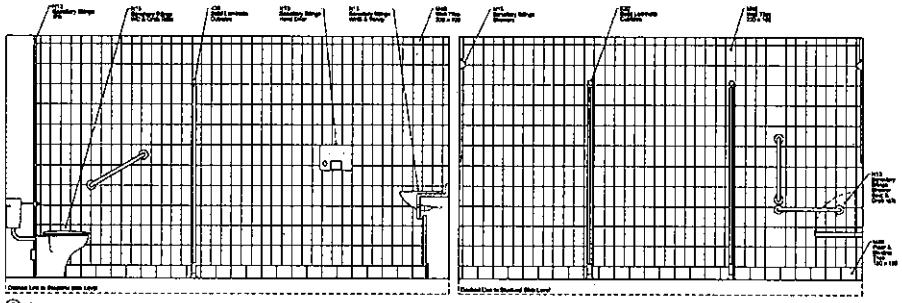
1204-EL502 A



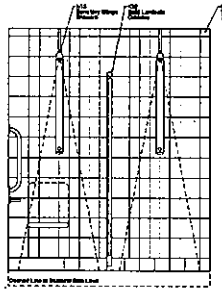
Ⓐ Elevation - Typical WC Cubicle



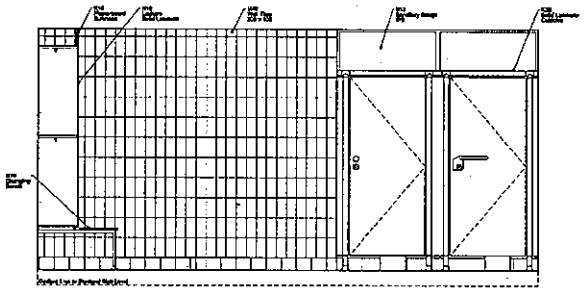
Ⓑ Elevation - Typical Wash Hand Basin



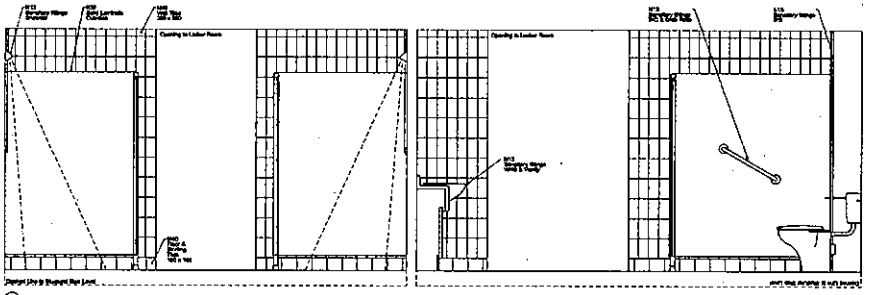
Ⓒ Section - Through WC & Showers



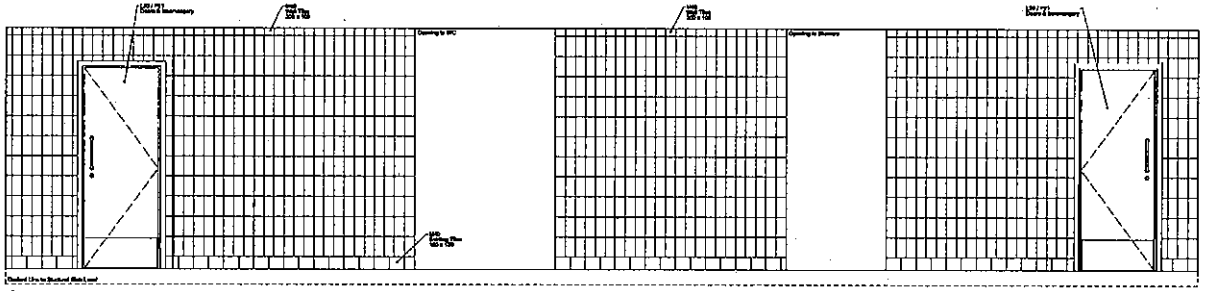
Ⓓ Section - Through Shower Cubicle



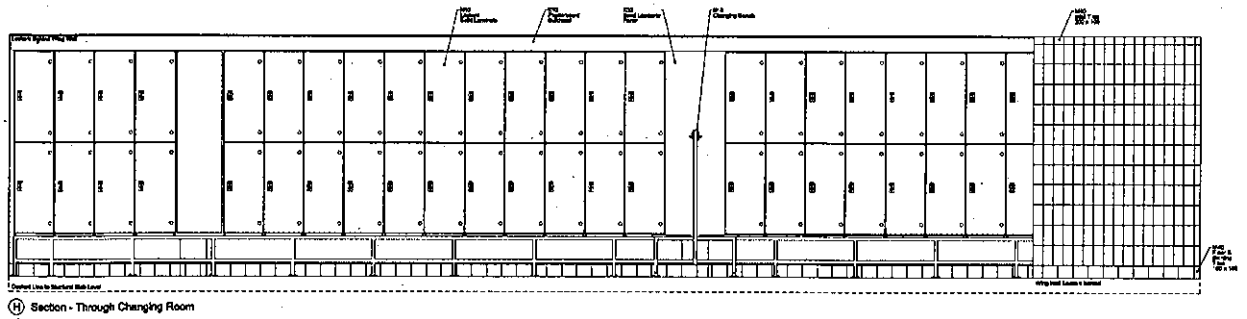
Ⓔ Section - Through Lockers & Cubicle Doors



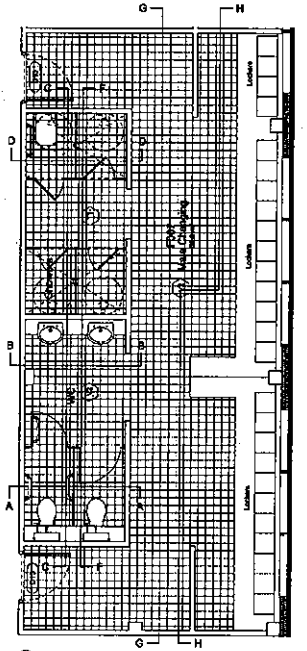
Ⓕ Section - Through WC & Showers



Ⓖ Section - Through Changing Room



Ⓗ Section - Through Changing Room



Ⓙ Male Changing Plan Scale 1:50

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS THESE MUST BE REPORTED TO THE SUPERVISING ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN INFORMATION ON ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

FOR INFORMATION

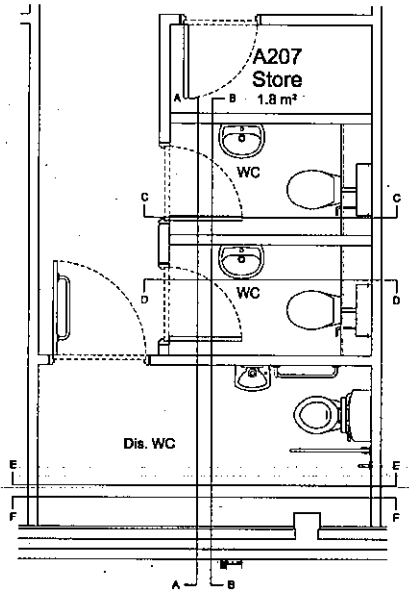
STUDIO E ARCHITECTS LTD

Marcia EnviRecover

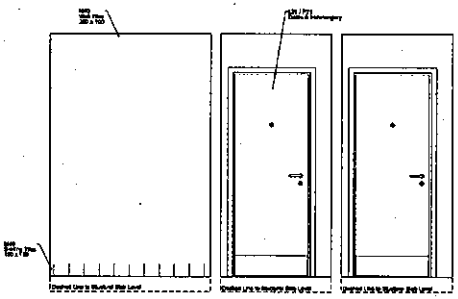
Male Changing Elevations First Floor

1:50 / 1:25 06.10.10

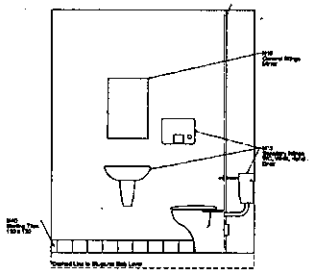
1204-EL501 A



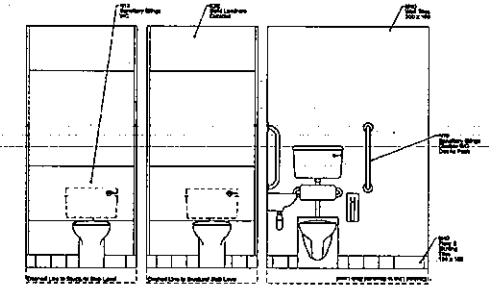
Ⓖ Plan of WC



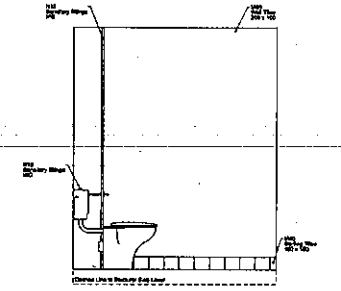
Ⓐ Elevation - Typical WC Cubicle



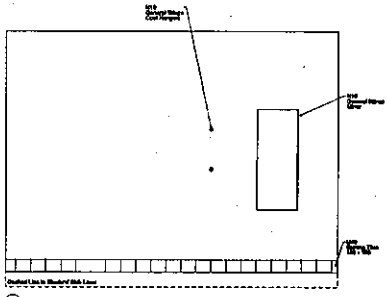
Ⓒ Elevation - Typical WC Cubicle



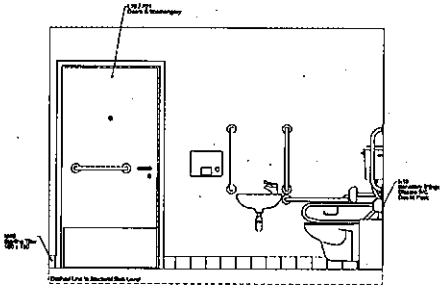
Ⓑ Elevation - Typical WC Cubicle



Ⓓ Elevation - Typical WC Cubicle



Ⓕ Elevation - Typical Disabled WC Cubicle



Ⓔ Elevation - Typical Disabled WC Cubicle

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND WHEN SETTING OUT OR DIMENSIONING, THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN KEY DRAWINGS OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

FOR INFORMATION

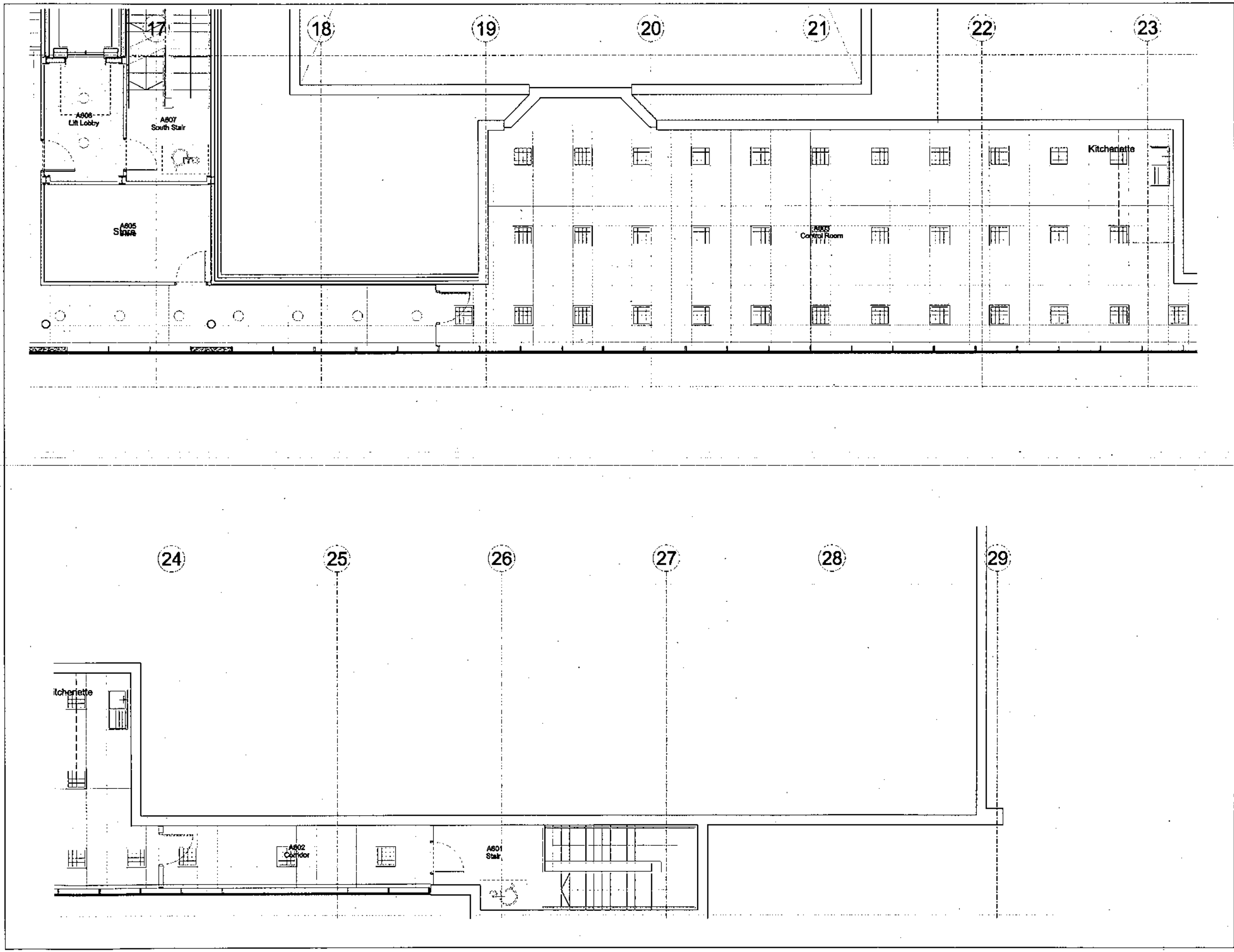
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

WC Plan & Elevations
Ground & Second Floor

1:50 1:25 06.10.10

1204-EL500 A



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PREFERENCE.

FOR INFORMATION

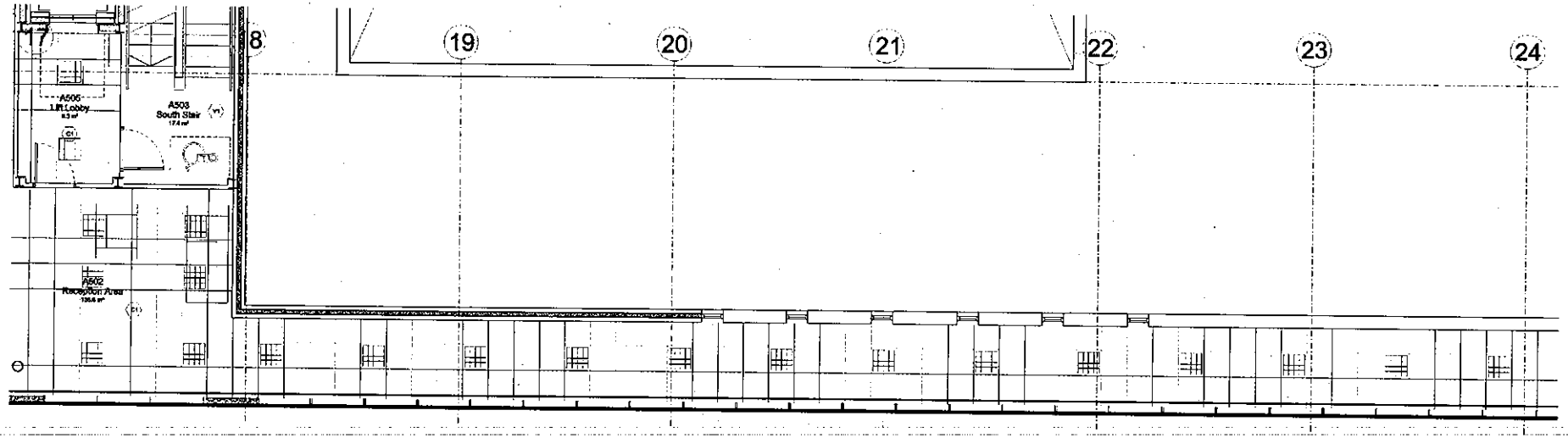
STUDIO E ARCHITECTS LTD

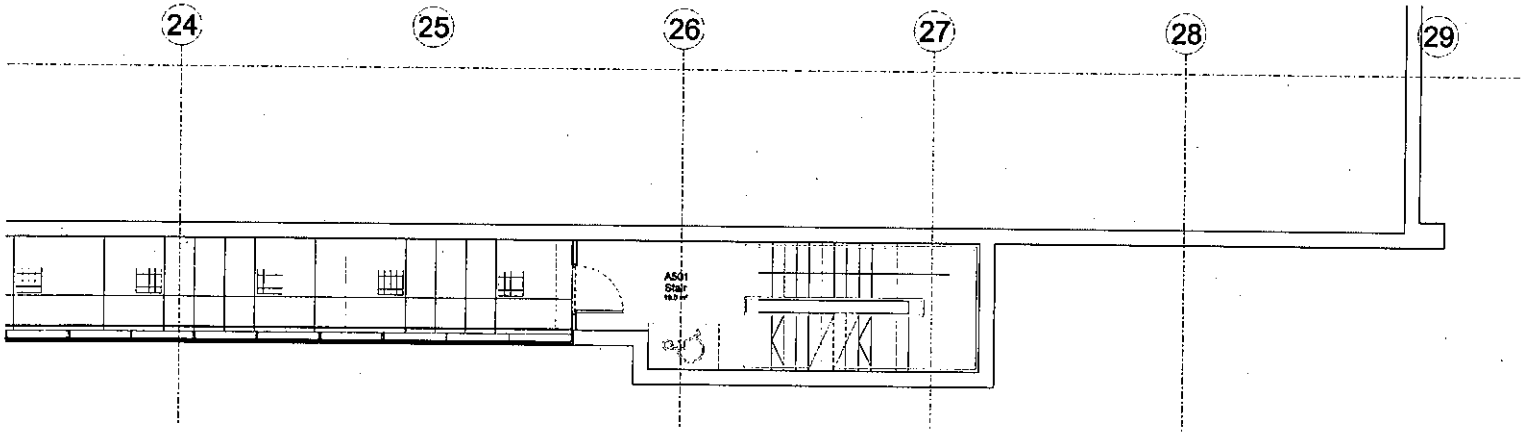
Mercia EnviRecover

Office Block
Fourth Floor RCP

1:50@A1 06.10.10

1204-EL127





NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSIONED.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN SPECIFICATION AND DRAWINGS, THE LATTER TAKE PRECEDENCE.

LEGEND

- Dense Blockwork
- Drywall Partition
- Glazing
- C1 Carpet tile
- V1 Vinyl
- V2 Vinyl (Wet Areas)
- T1 Floor Tiles (Wet Areas)

FOR INFORMATION

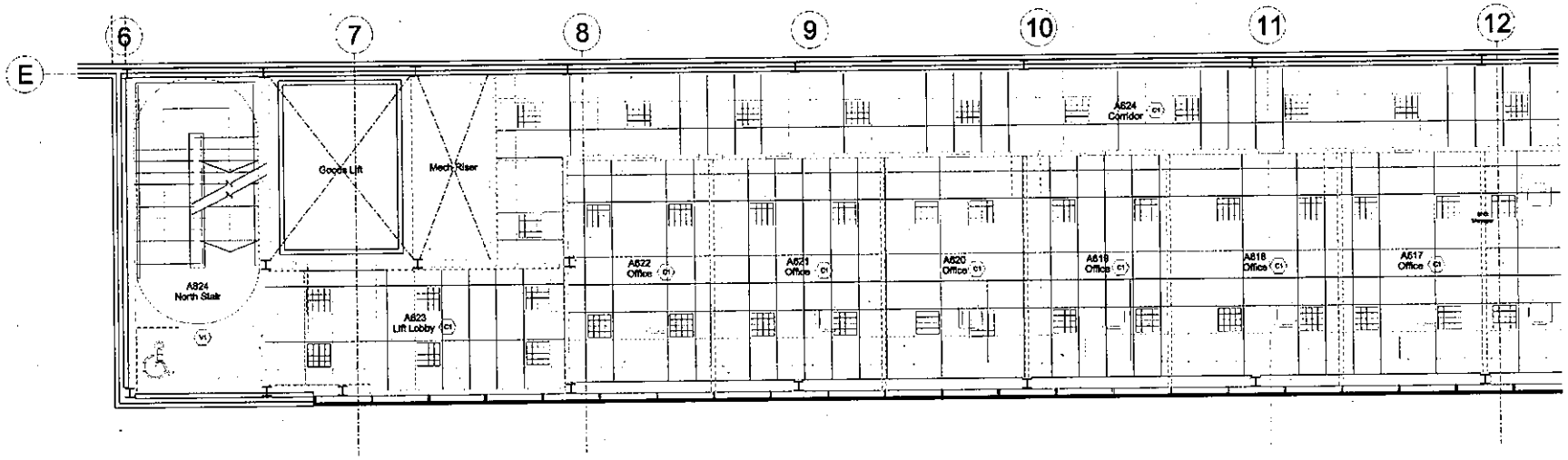
STUDIO E ARCHITECTS LTD

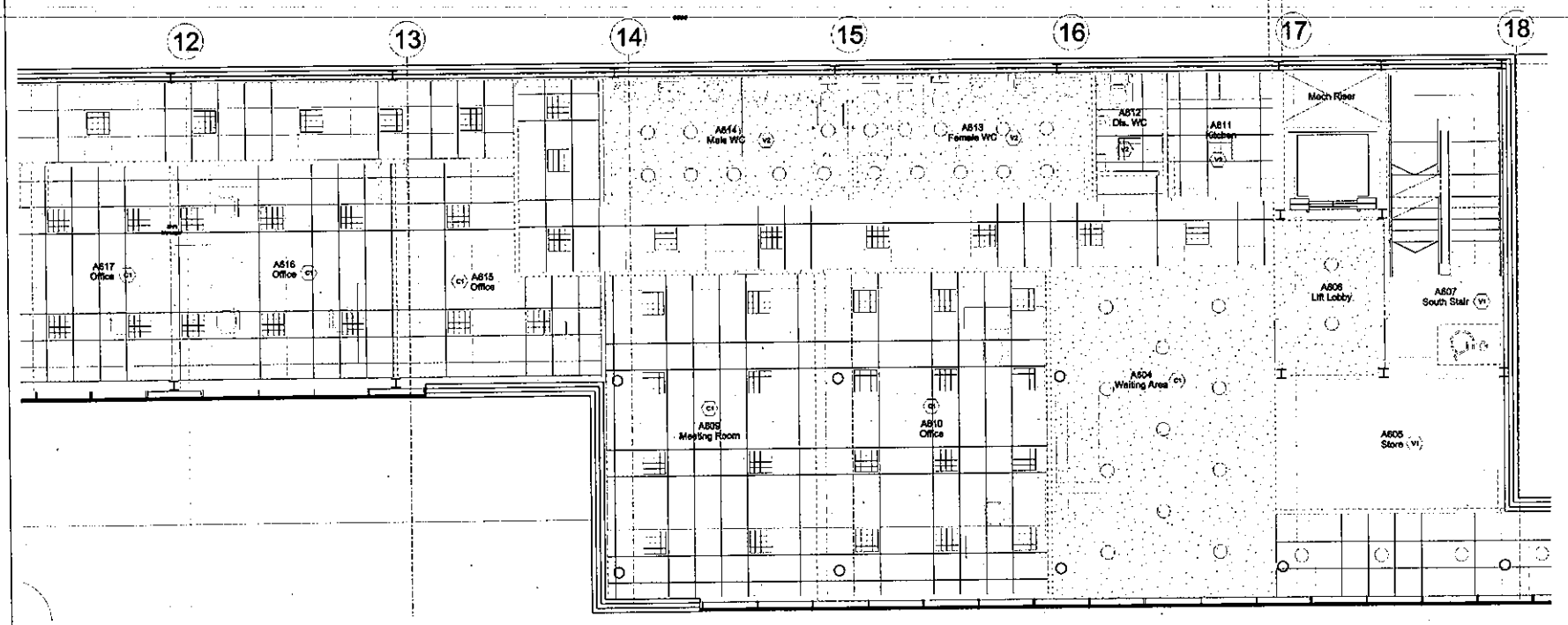
Mercia EnviRecover

Office Block
Third Floor RCP

1:50@A1 06.10.10

1204-EL126





NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND IN PRINTS OR DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

FOR INFORMATION

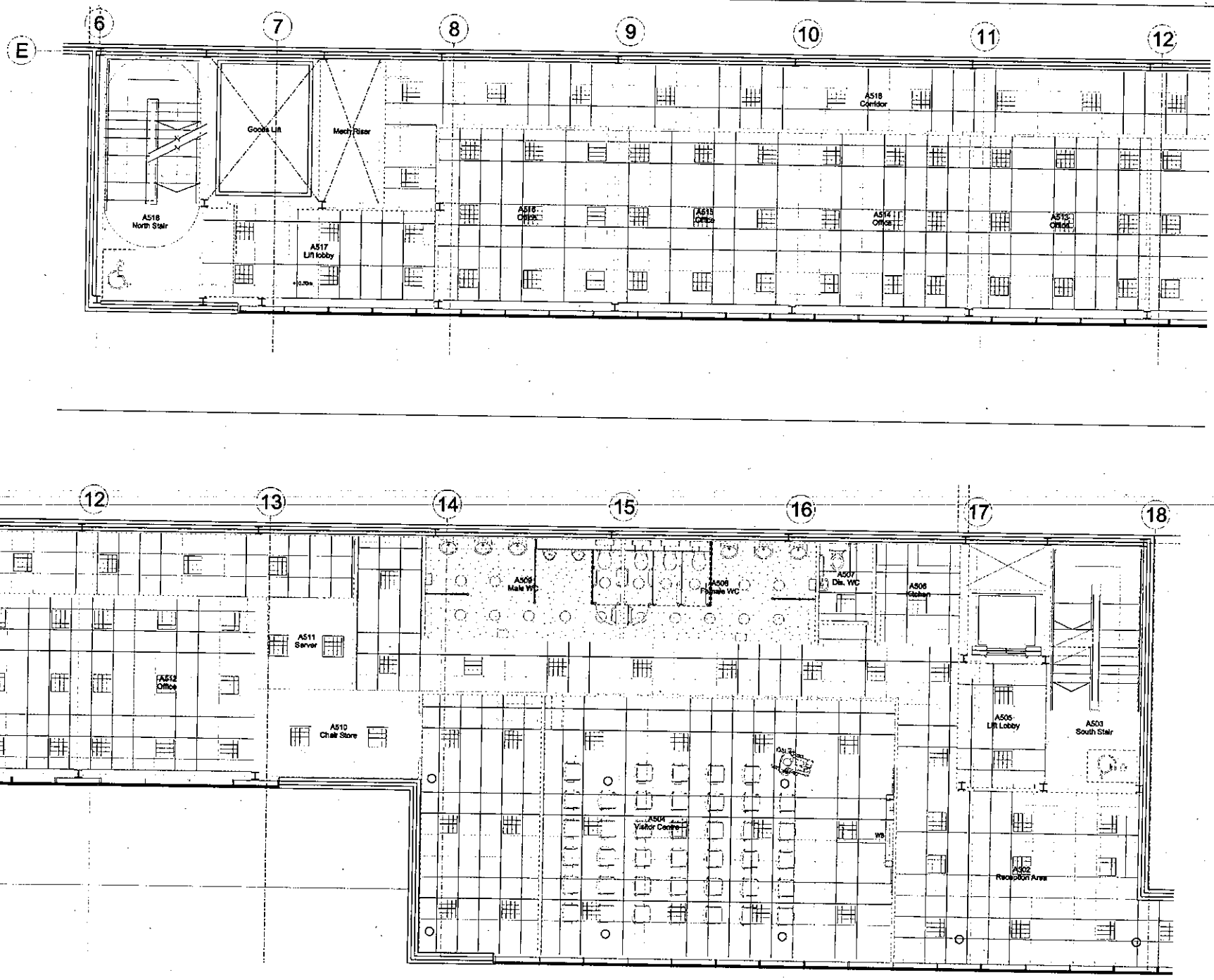
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

Office Block
Fourth Floor RCP

1:50@A1 06.10.10

1204-EL125



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE SUBMISSION OF WORK.
3. WHERE ANY DISCREPANCIES ARE FOUND WITHIN THIS DRAWING OR WITHIN THE SET THEY SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN DRAWINGS OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PREFERENCE.

FOR INFORMATION

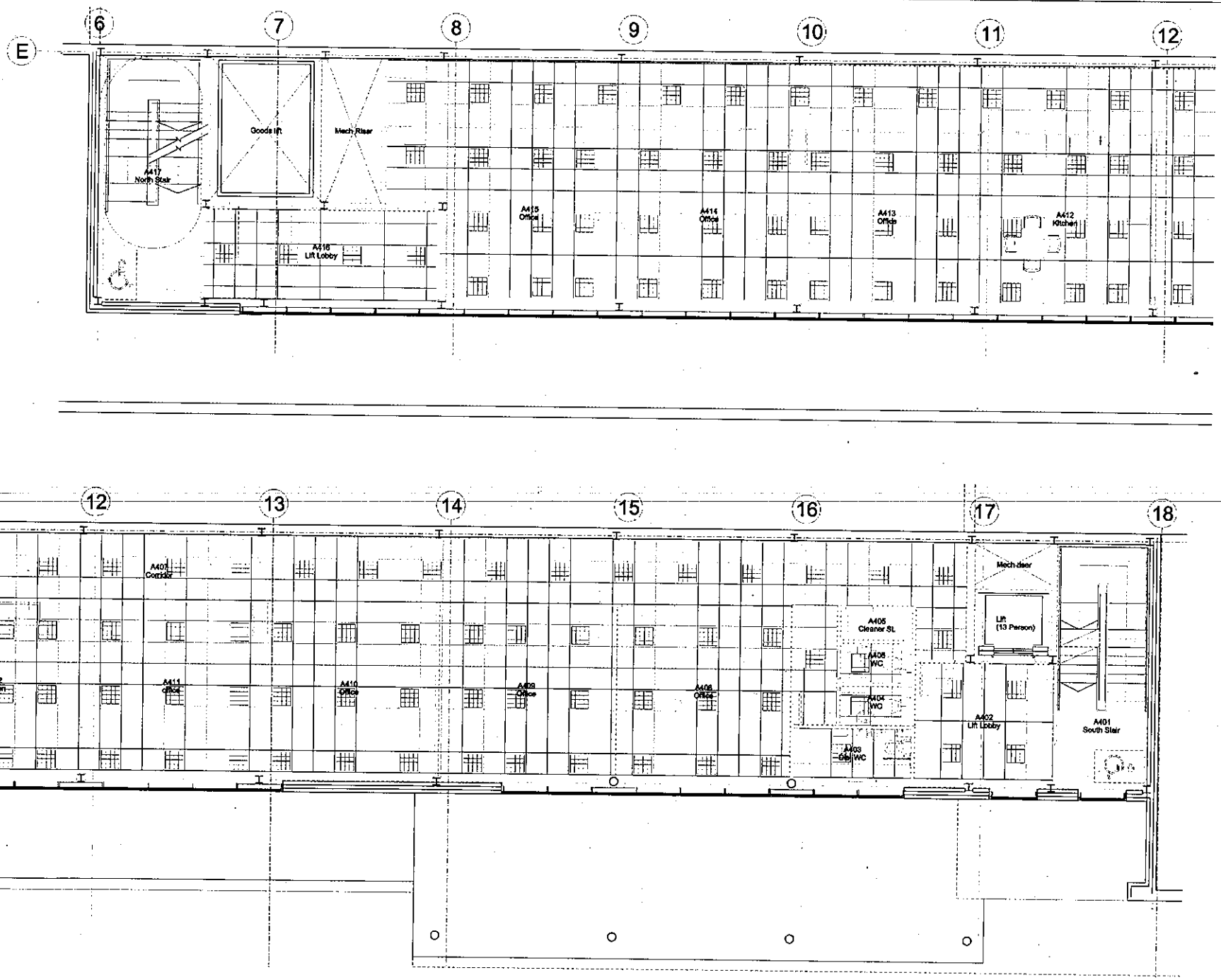
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

Office Block
Third Floor RCP

1:50@A1 06.10.10

1204-EL124



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DRAWINGS OR WITHIN DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PREFERENCE.

E/3

FOR INFORMATION

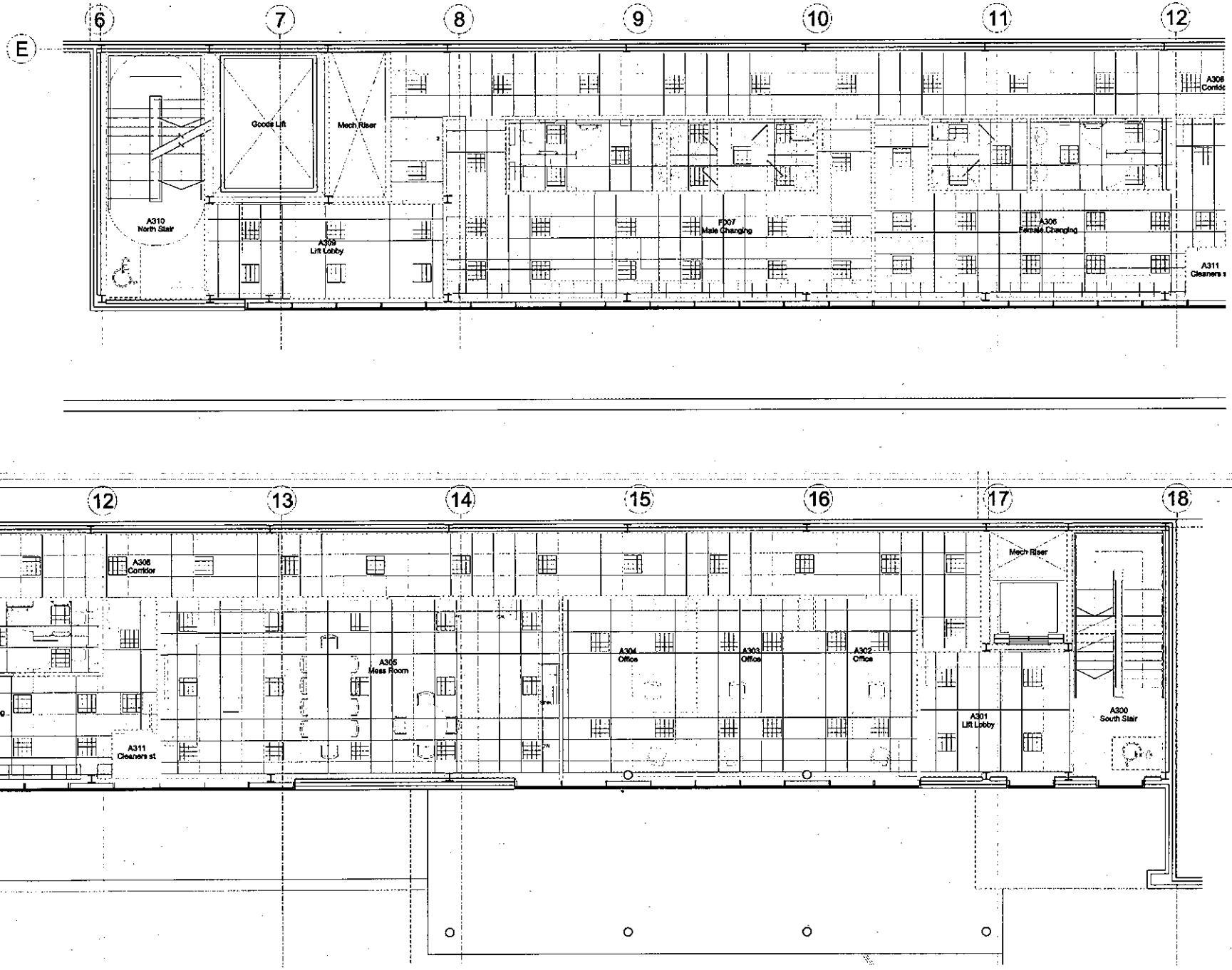
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

Office Block
Second Floor RCP

1:50@A1 06.10.10

1204-EL123



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM IT BUT MUST CHECK ALL DIMENSIONS TO BE TAKEN FROM FIGURED DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

FOR INFORMATION

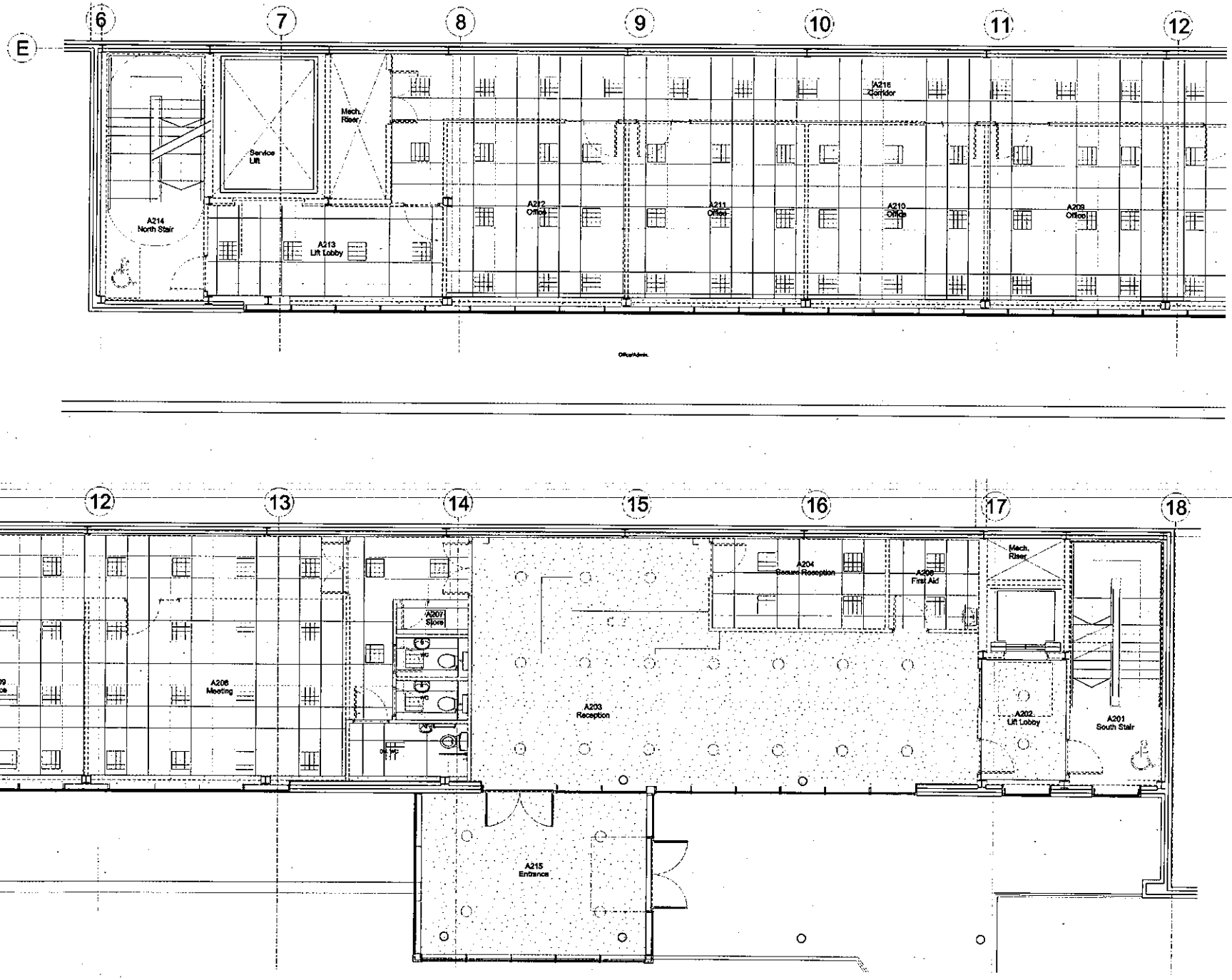
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

Office Block
First Floor RCP

1:50@A1 06.10.10

1204-EL122



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST VERIFY FROM THE DRAWING ALL DIMENSIONS DO NOT SCALE FROM DRAWINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND WITHIN DRAWINGS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRIORITY

FOR INFORMATION

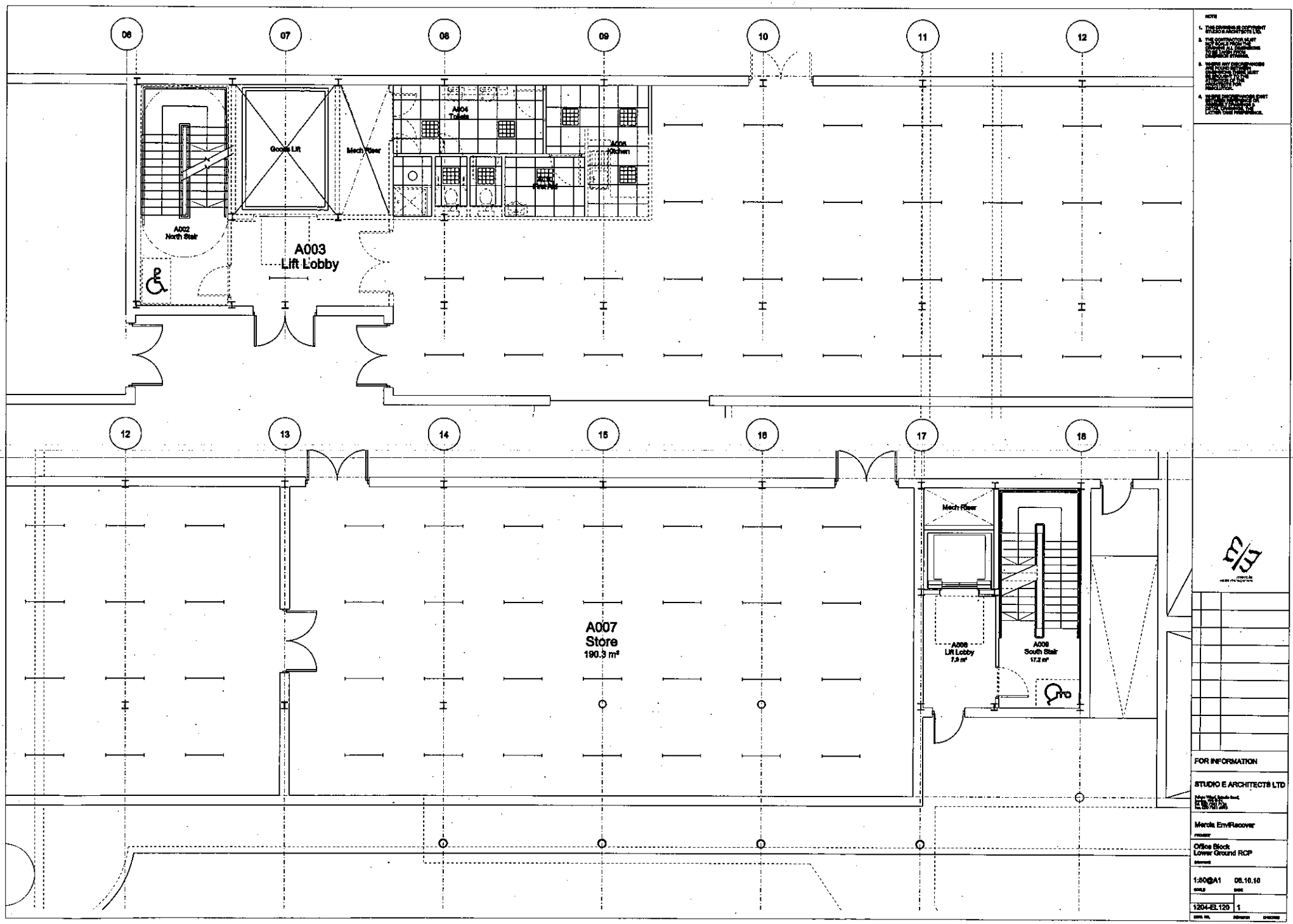
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

Office Block
Ground Floor RCP

1:50@A1 06.10.10

1204-EL121



NOTE

1. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING. ONLY FIGURED DIMENSIONS ARE TO BE USED.
3. [illegible]
4. [illegible]

FOR INFORMATION

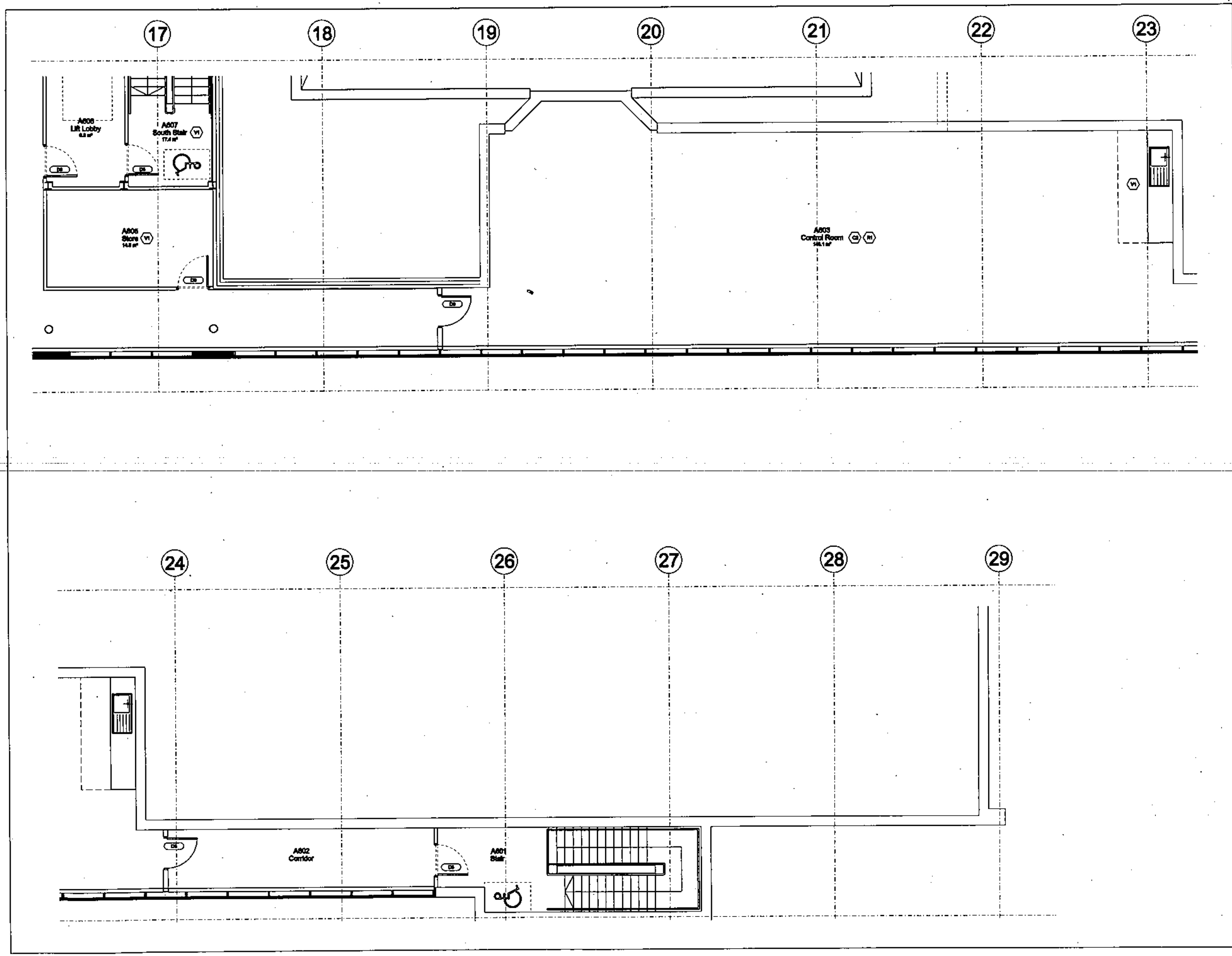
STUDIO E ARCHITECTS LTD

Merola EnviRecover

Office Block
Lower Ground RCP

1:50@A1 06.10.10

1204-EL120 1



C1 Carpet tile
C2 Anti Static Carpet tile
V1 Vinyl
V2 Vinyl (Wet Areas)
T1 Floor Tiles (Wet Areas)
R1 Raised Floor
D1 Door Tag
Detail Tag

FOR INFORMATION

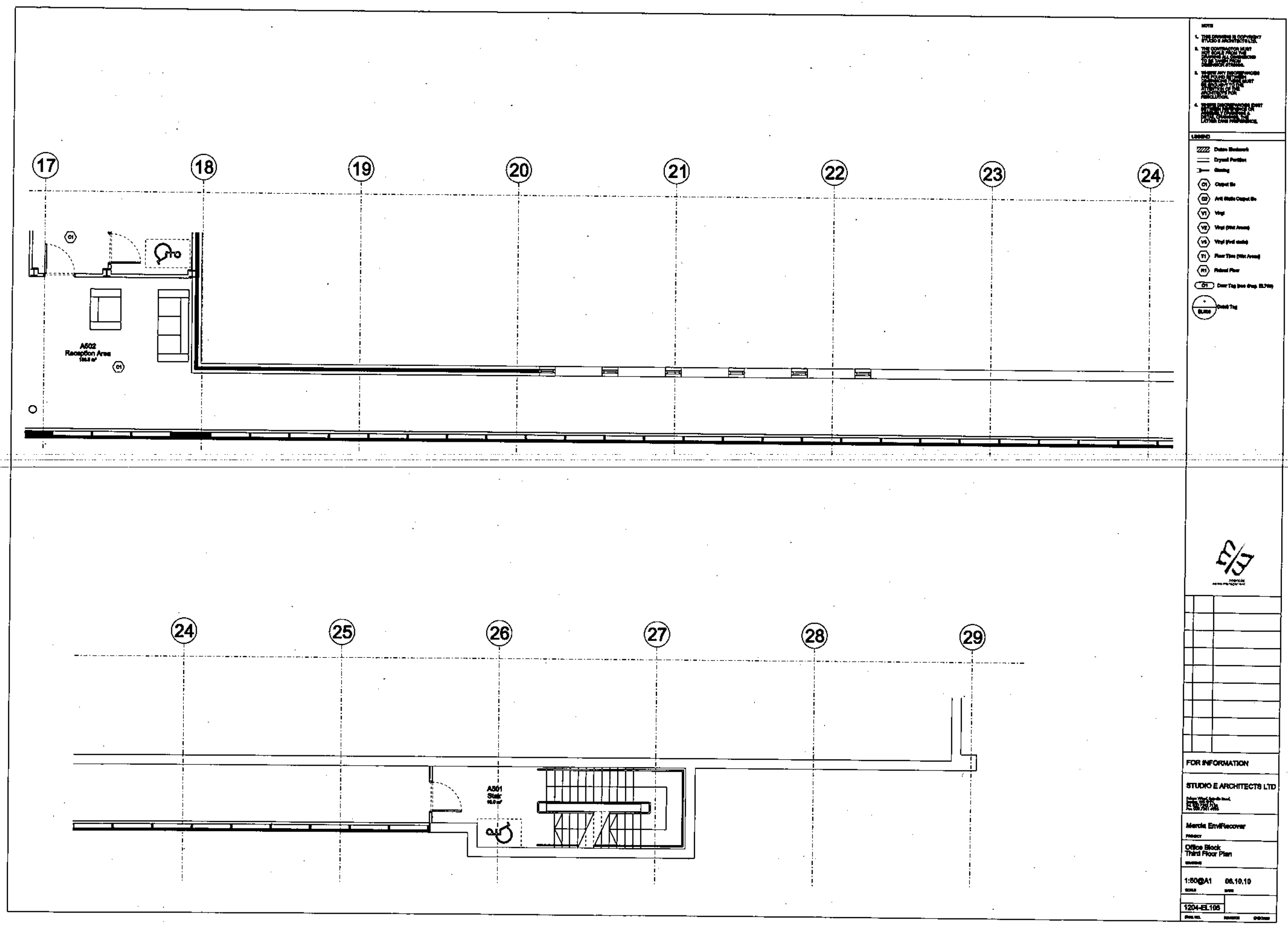
STUDIO E ARCHITECTS LTD

Mercia EnviRecover

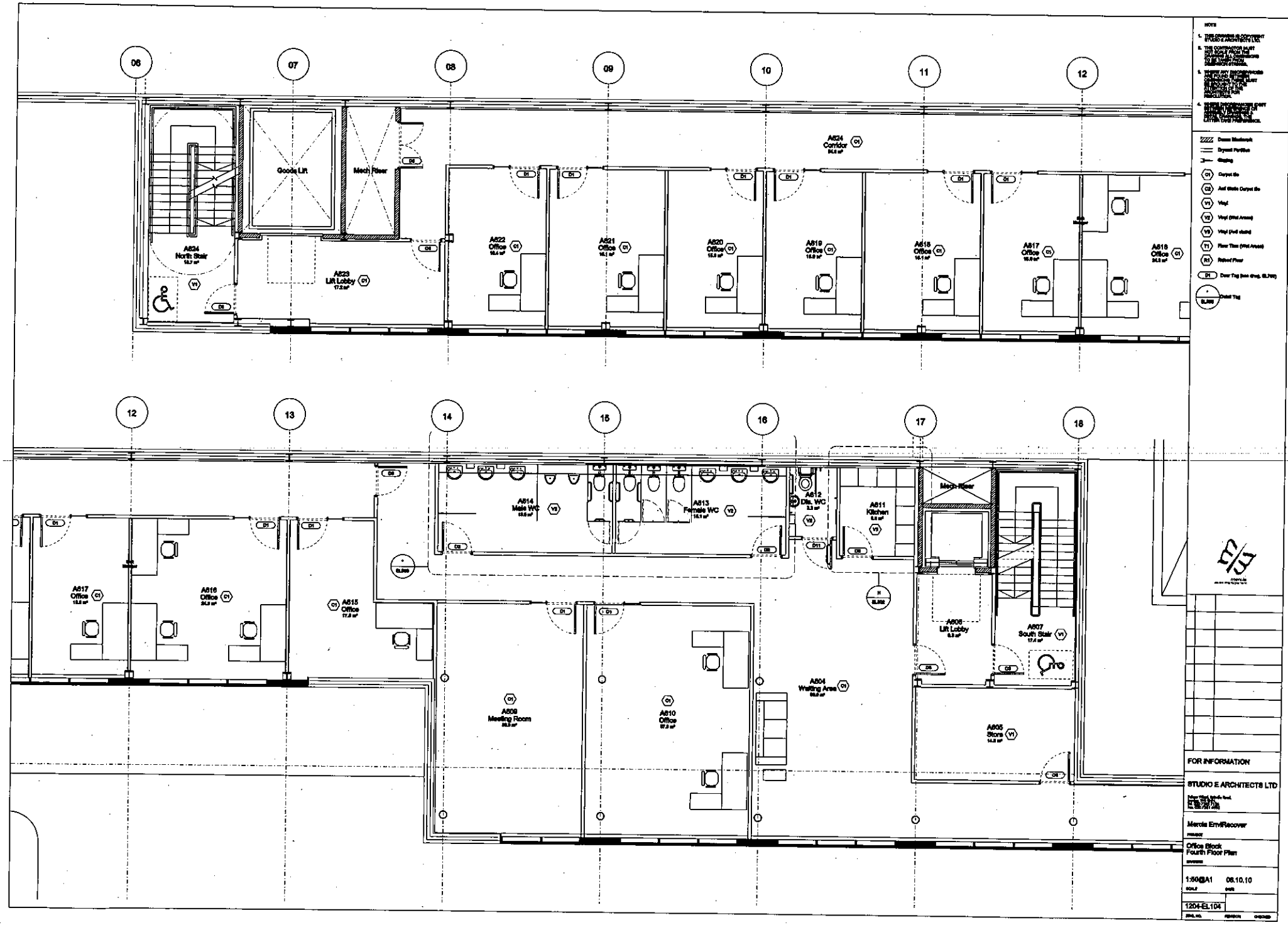
Office Block
Fourth Floor Plan

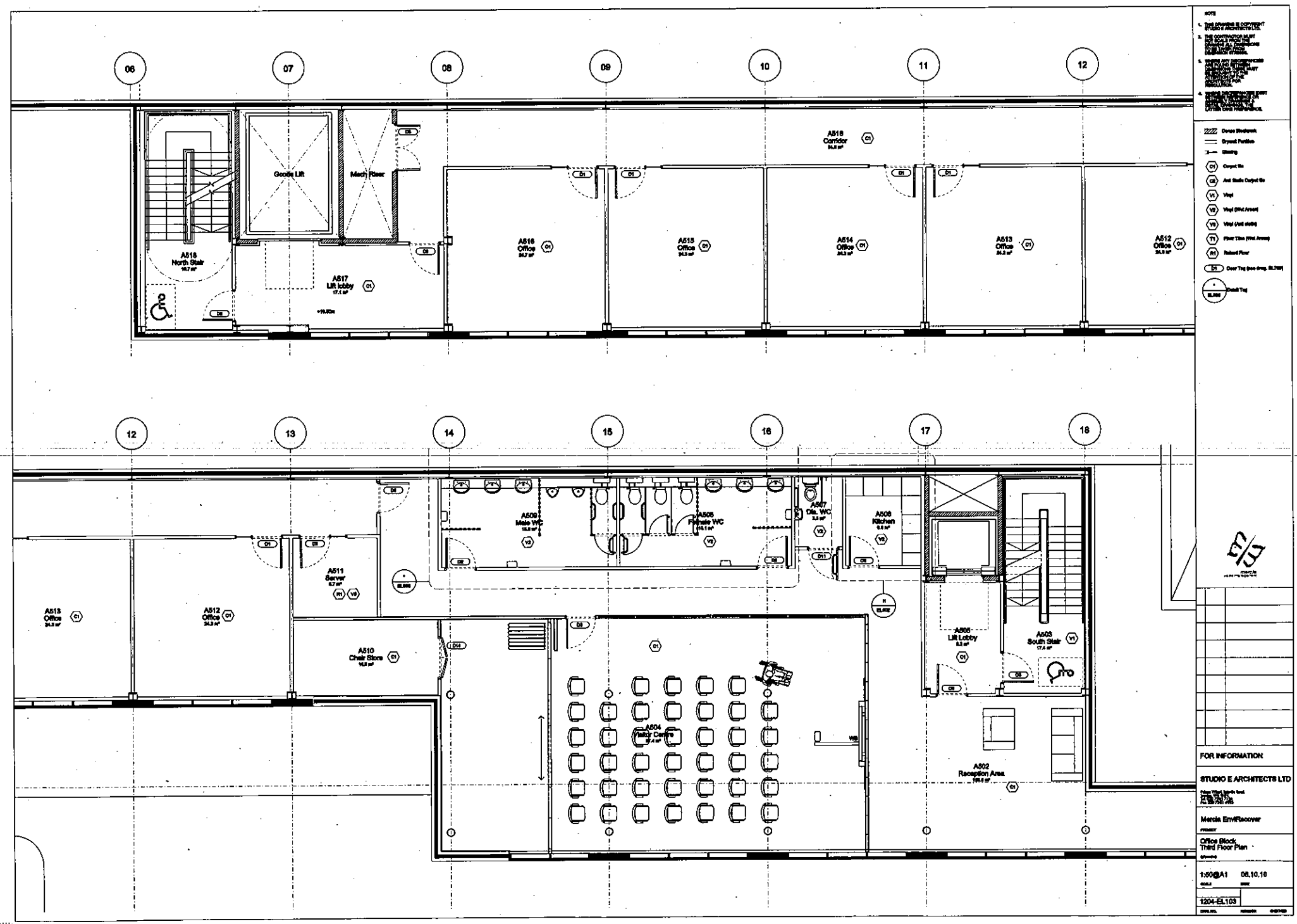
1:50@A1 06.10.10

1204-EL106



17
18
19
20
21
22
23
24
A502
Reception Area
A501
Stair
24
25
26
27
28
29
LEGEND
FOR INFORMATION
STUDIO E ARCHITECTS LTD
Mercia EnviRecover
Office Block
Third Floor Plan
1:50@A1
06.10.10
1204-EL106


06
07
08
09
10
11
12
13
14
15
16
17
18
A624 Corridor
A623 Lift Lobby
A624 North Stair
Goods Lift
Mech Riser
A622 Office
A621 Office
A620 Office
A619 Office
A618 Office
A617 Office
A616 Office
A614 Male WC
A613 Female WC
A612 Dis. WC
A611 Kitchen
A615 Office
A609 Meeting Room
A610 Office
A604 Waiting Area
A605 Lift Lobby
A607 South Stair
A605 Store
FOR INFORMATION
STUDIO E ARCHITECTS LTD
Mercia EmfRecover
Office Block
Fourth Floor Plan
1:50@A1
08.10.10
1204-EL104



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR SHOP DRAWINGS.
3. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

Dense Blockwork
Drywall Partition
Glazing
C1 Carpet Tile
C2 Anti Static Carpet Tile
V1 Vinyl
V2 Vinyl (Wet Areas)
V3 Vinyl (Anti static)
T1 Floor Tiles (Wet Areas)
R1 Raised Floor
D1 Door Tag (see dwg. SL700)
Detail Tag

FOR INFORMATION

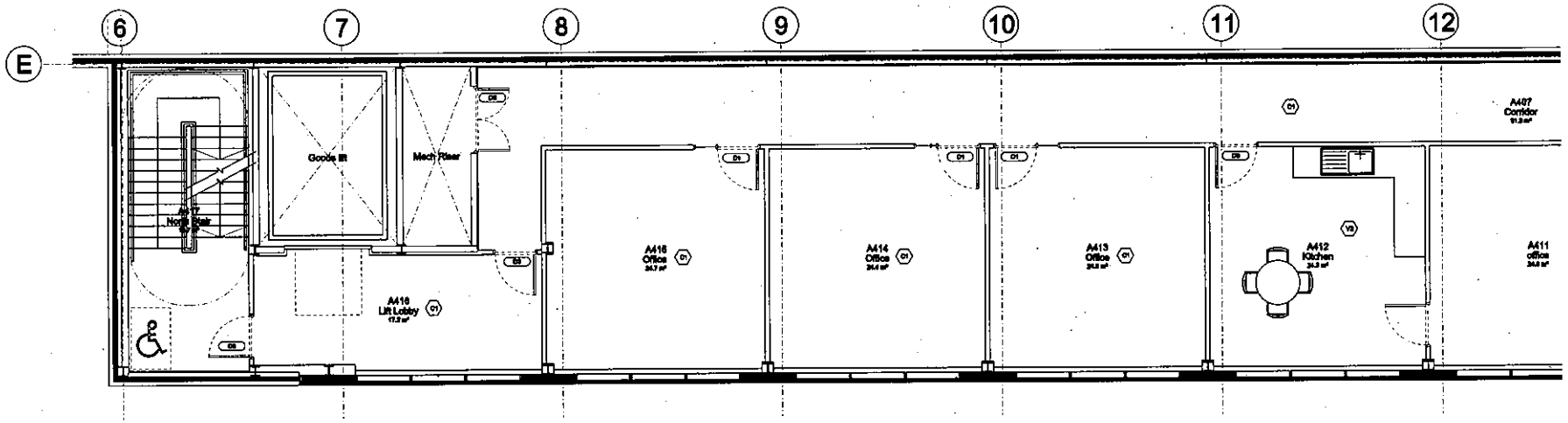
STUDIO E ARCHITECTS LTD

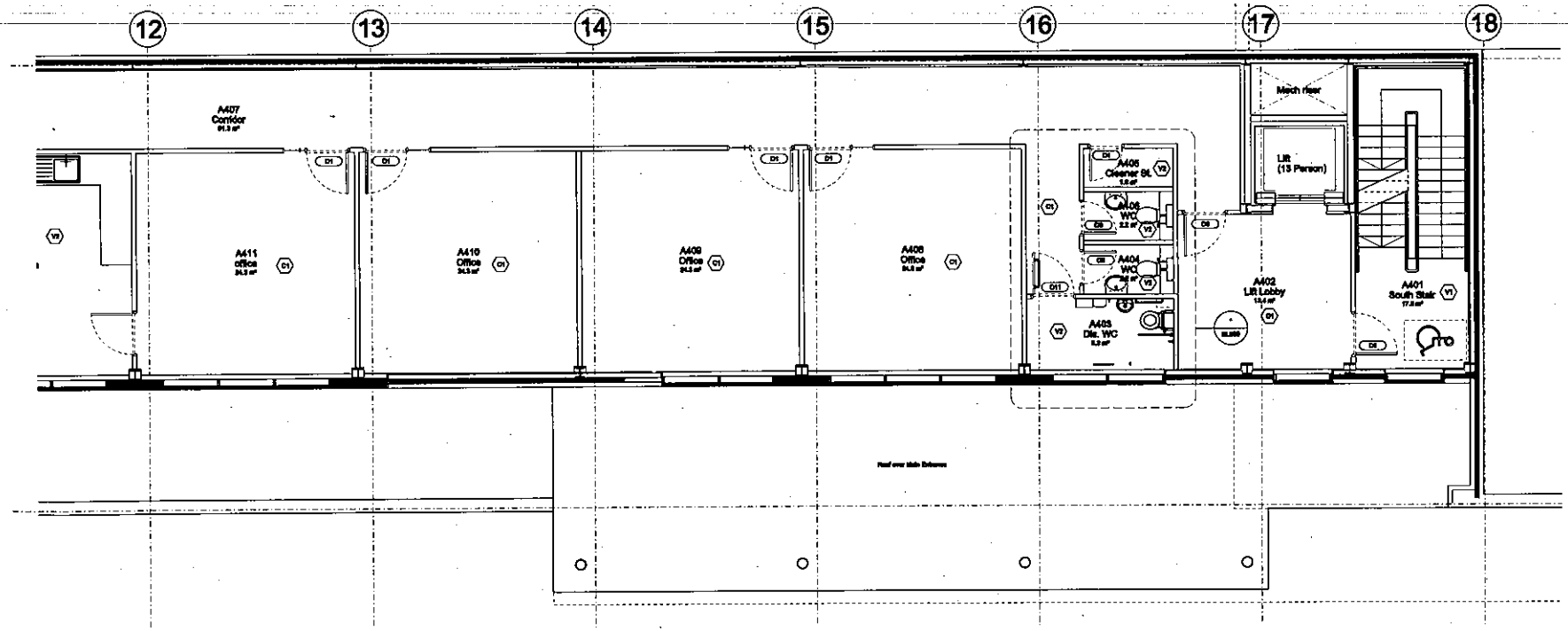
Mercia EnviRecovery

Office Block
Third Floor Plan

1:50@A1 06.10.10

1204-EL103





NOTE

LEGEND

- Demo Boulevard
- Drywall Partition
- Glazing
- D1 Carpet tile
- D2 Anti Static Carpet tile
- V1 Vinyl
- V2 Vinyl (Wet Areas)
- V3 Vinyl (Anti static)
- T1 Floor Tiles (Wet Areas)
- R1 Raised Floor
- D1 Door Tag (see drwg. SL700)
- SL300 Outlet Tag

FOR INFORMATION

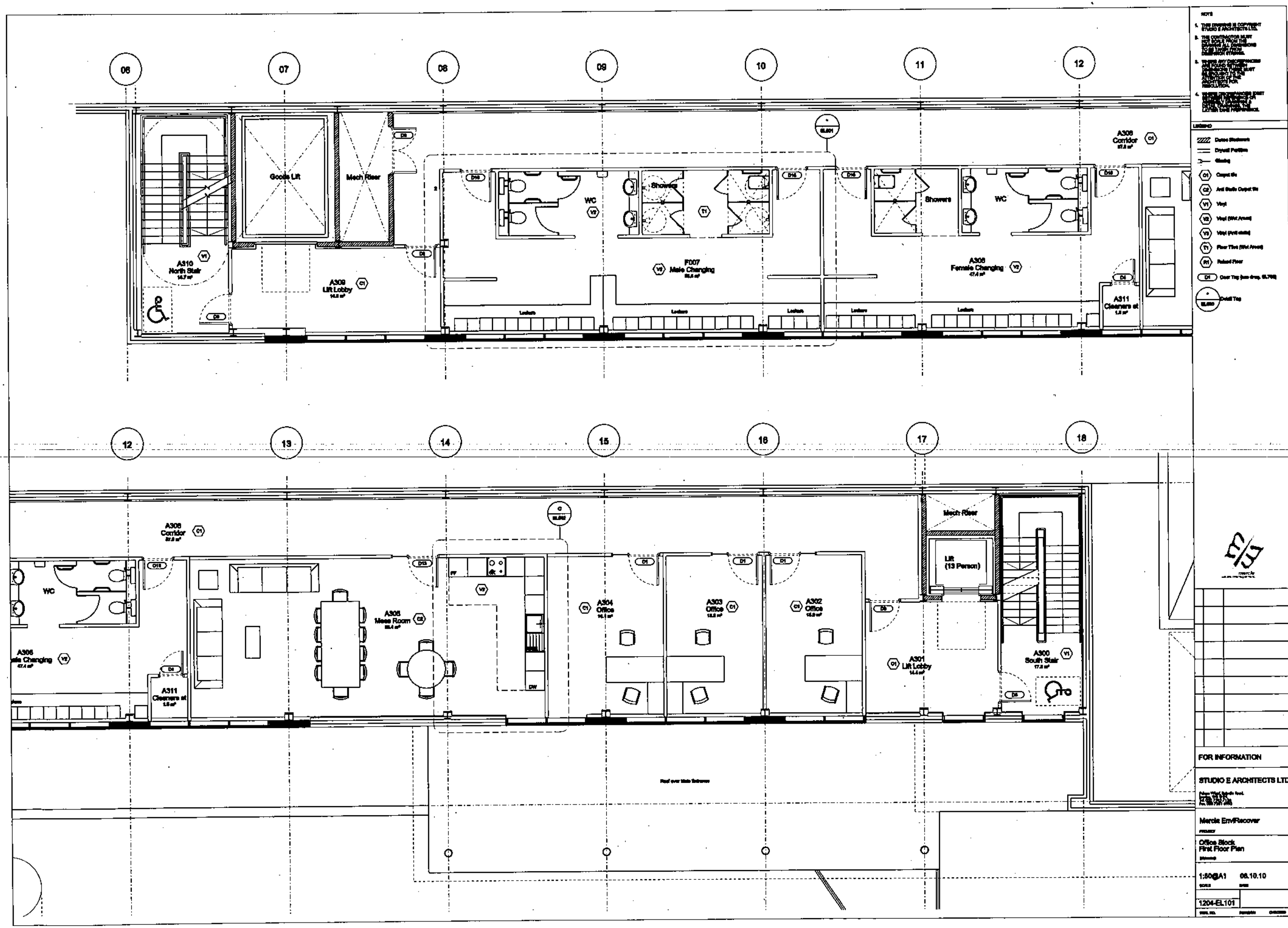
STUDIO E ARCHITECTS LTD

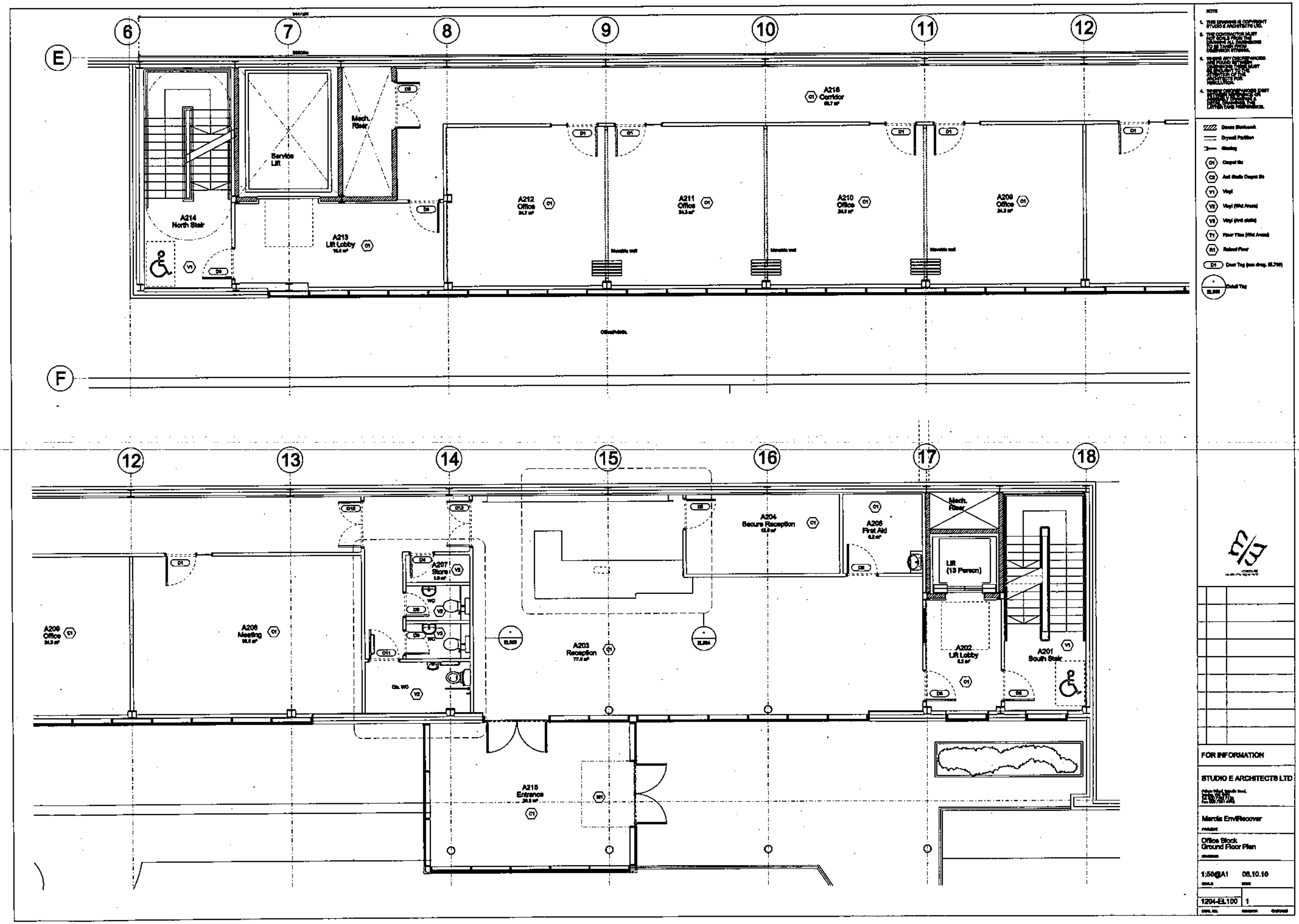
Marcle EnviRecover

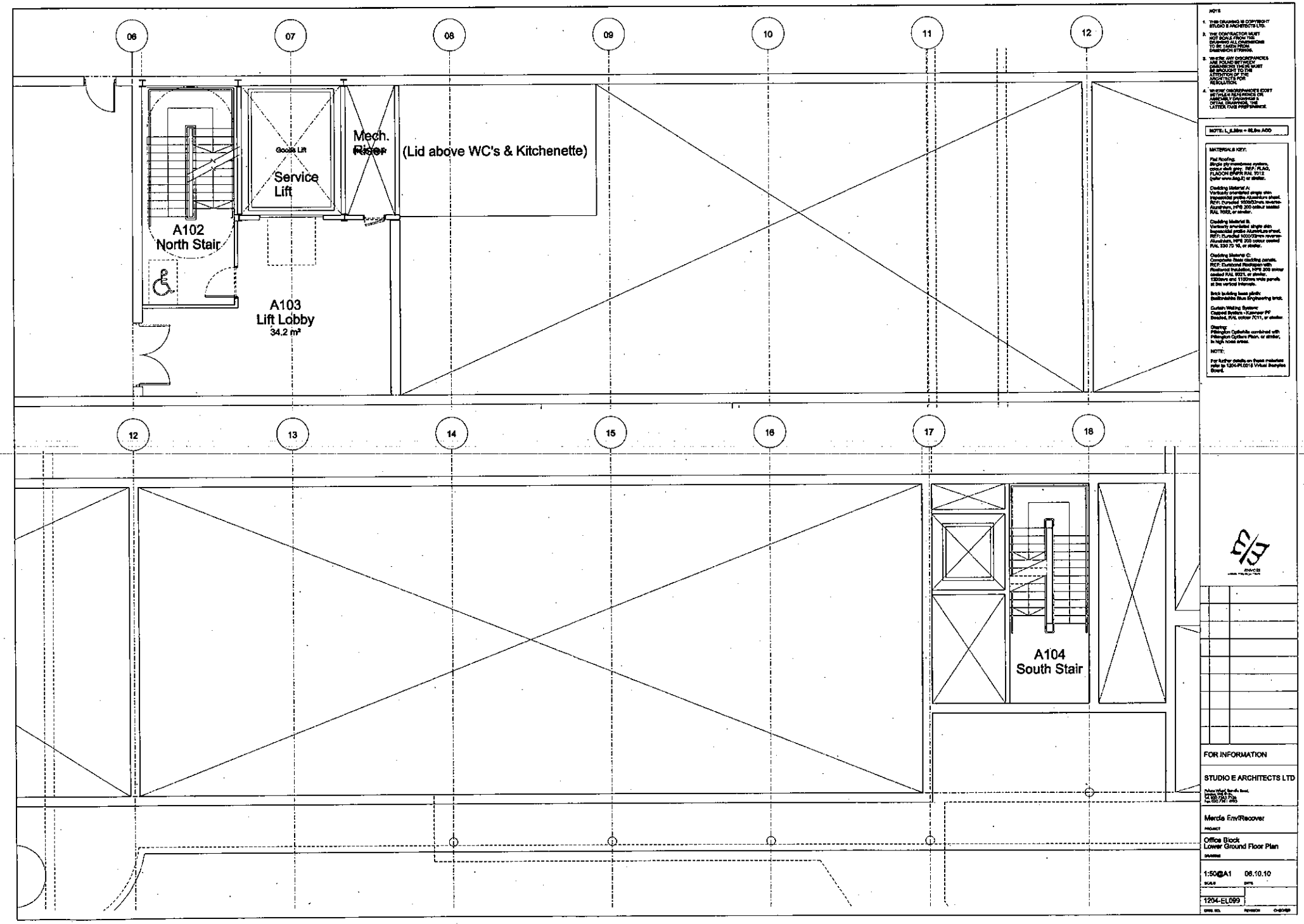
Office Block
Second Floor Plan

1:50@A1 06.10.10

1204-EL102


06
07
08
09
10
11
12
13
14
15
16
17
18
A310 North Stair
Goods Lift
Mech Riser
A309 Lift Lobby
WC
Showers
F007 Male Changing
A308 Female Changing
A306 Corridor
A311 Cleaners st
Lockers
A305 Mess Room
A304 Office
A303 Office
A302 Office
A301 Lift Lobby
Lift (13 Person)
A300 South Stair
Roof over Main Entrance
FOR INFORMATION
STUDIO E ARCHITECTS LTD
Mercia EnviRecover
Office Block
First Floor Plan
1:50@A1
06.10.10
1204-EL101


A216 Corridor
A214 North Stair
Service Lift
Mech. Riser
A213 Lift Lobby
A212 Office
A211 Office
A210 Office
A209 Office
Movable wall
A209 Office
A208 Meeting
A207 Store
WC
Dis. WC
A203 Reception
A204 Secure Reception
A205 First Aid
Mech. Riser
Lift (13 Person)
A202 Lift Lobby
A201 South Stair
A215 Entrance
Carpet tile
Vinyl
Floor Tiles (Wet Areas)
Raised Floor
Door Tag (see drwg. EL700)
Detail Tag
FOR INFORMATION
STUDIO E ARCHITECTS LTD
Mercia EnviRecover
Office Block
Ground Floor Plan
1:50@A1
06.10.10
1204-EL100
1



NOTE:

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. VERIFY ALL DISCREPANCIES AND ALTERATIONS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PRECEDENCE.

NOTE: L_0.00m = 46.6m AOD

MATERIALS KEY:

Flat Roofing:
Single ply membrane system, colour dark grey. REF: FLAG, FLAGON EPDM RAL 7012 (refer www.flag.at) or similar.

Cladding Material A:
Vertically orientated single skin trapezoidal profile Aluminium sheet. REF: Euroclad 1000/333mm reverse-Aluminium, HPS 200 colour coated RAL 7022, or similar.

Cladding Material B:
Vertically orientated single skin trapezoidal profile Aluminium sheet. REF: Euroclad 1000/275mm reverse-Aluminium, HPS 200 colour coated RAL 230 70 10, or similar.

Cladding Material C:
Composite Glass cladding panels. REF: Eurobond Rockspan with Rockwool Insulation, HPS 200 colour coated RAL 9021, or similar. 1300mm and 1100mm wide panels at 5m vertical intervals.

Brick building base plinth:
Staffordshire Blue Engineering brick.

Curtain Walling System:
Capped System - Kawneer RF Braided, RAL colour 7011, or similar.

Glazing:
Pilkington Optiwhite combined with Pilkington Optifloat Plain, or similar, to N/A noise areas.

NOTE:

For further details on finish materials refer to 1204-PL0018 Virtual Samples Board.

FOR INFORMATION

STUDIO E ARCHITECTS LTD

Merida Env/Recover

PROJECT

Office Block
Lower Ground Floor Plan

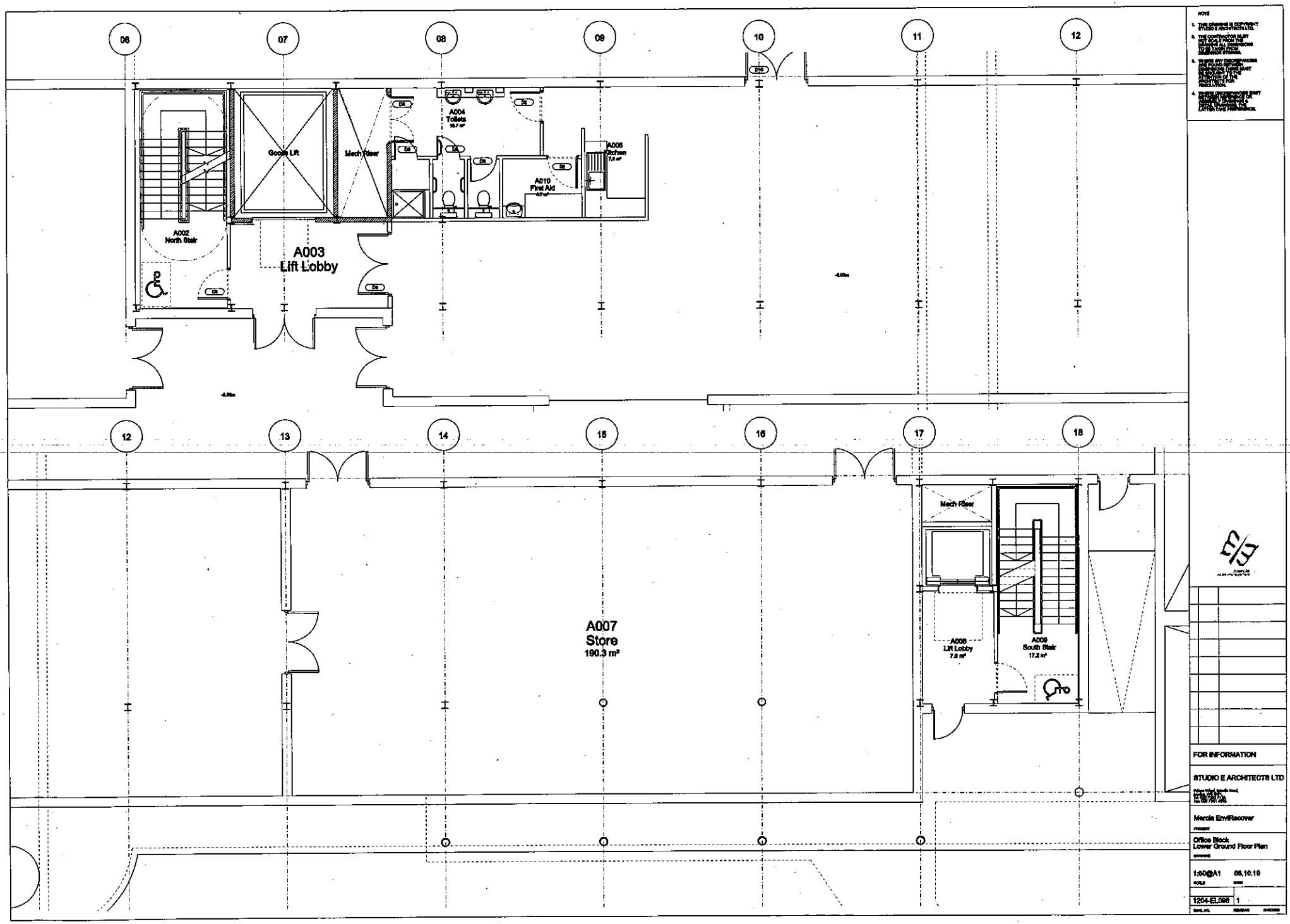
DRAWING

1:50@A1 06.10.10

SCALE DATE

1204-EL099

DRWG NO. REVISION CHECKED



NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THIS DRAWING OTHER THAN FOR PLANNING PURPOSES.
3. ALL DIMENSIONS AND SETTING OUT TO BE CHECKED ON SITE BEFORE COMMENCEMENT OF ANY WORK OR SHOP DRAWINGS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

FOR INFORMATION

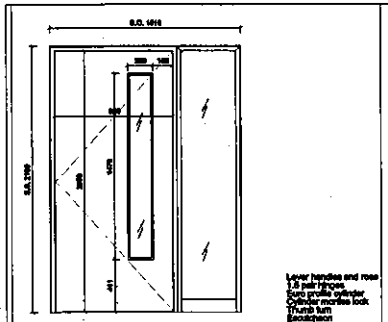
STUDIO E ARCHITECTS LTD

Merida EnviRecover

Office Block
Lower Ground Floor Plan

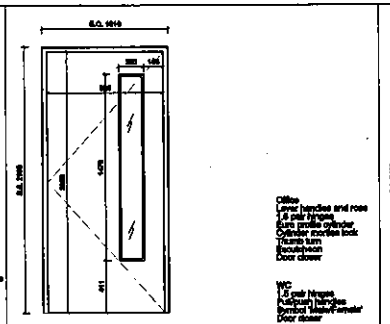
1:50@A1 06.10.10

1204-EL098 1



Lever handles and rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Door closer

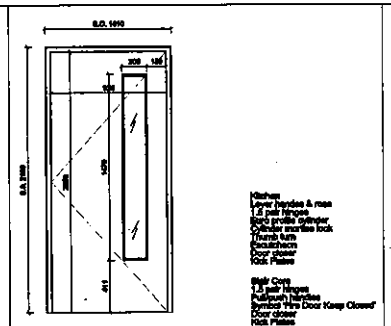
Type D1 Office Door & Glazed Screen — Veneered Finish



Office
Lever handles and rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Door closer

WC
1.5 pair hinges
Lockpan handles
Symbol 'Male/Female'
Door closer

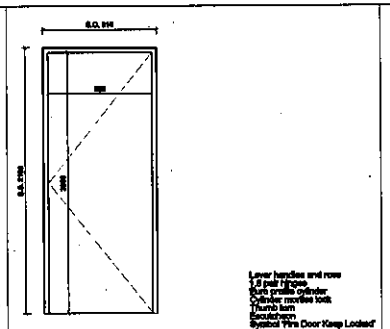
TYPE D2 Office Door & WC — Veneered Finish



Kitchen
Lever handles & rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Door closer
Kick Plates

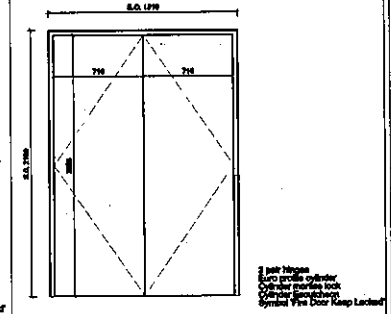
Stair Core
1.5 pair hinges
Pullpush handles
Symbol 'Fire Door Keep Closed'
Door closer
Kick Plates

TYPE D3 Stair Core & Kitchen FD30s — Veneered Finish



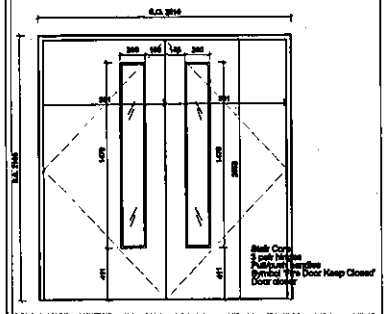
Lever handles and rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Symbol 'Fire Door Keep Locked'

TYPE D4 Store 30min FR — Paint Finish



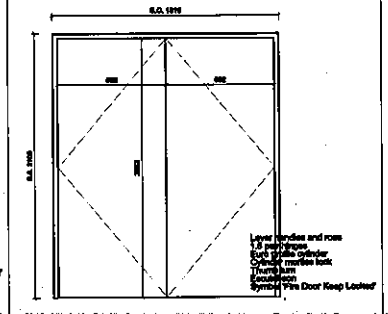
2 pair hinges
Euro profile cylinder
Cylinder mortise lock
Cylinder Escutcheon
Symbol 'Fire Door Keep Locked'

TYPE D5 Riser Door 30min Fire Rated — Paint Finish



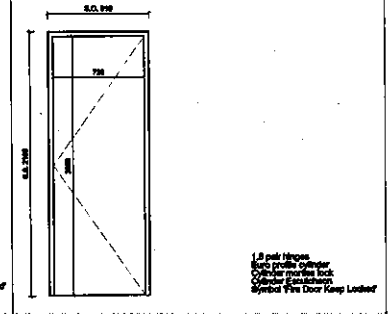
Stair Core
2 pair hinges
Pullpush handles
Symbol 'Fire Door Keep Closed'
Door closer

Type D6 Double Lobby FD60s — Paint Finish



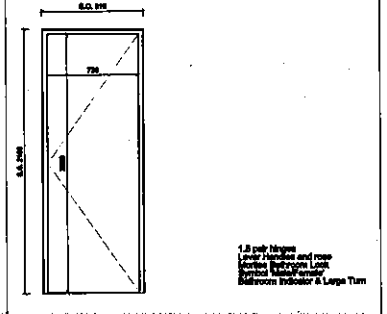
Lever handles and rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Symbol 'Fire Door Keep Locked'

Type D7 Double Store — Paint Finish



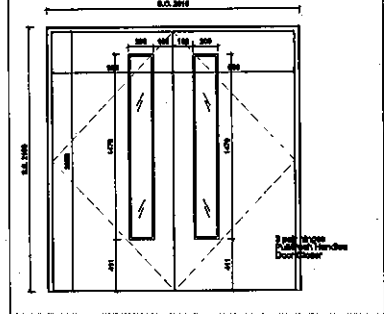
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Symbol 'Fire Door Keep Locked'

Type D8 Mechanical Riser FD30 — Paint Finish



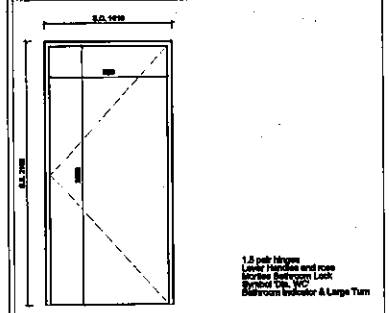
1.5 pair hinges
Lever Handles and rose
Marties Bathroom Lock
Symbol 'Male/Female'
Bathroom Indicator & Large Turn

Type D9 WC Cubicle — Paint Finish



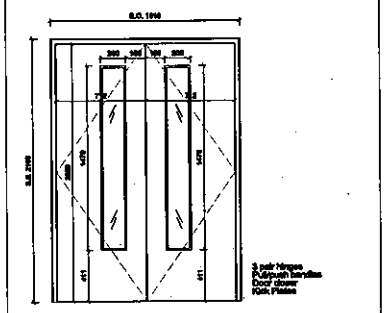
2 pair hinges
Lever Handles and rose
Door Closer

Type D10 Double Doors FD60s — Paint Finish



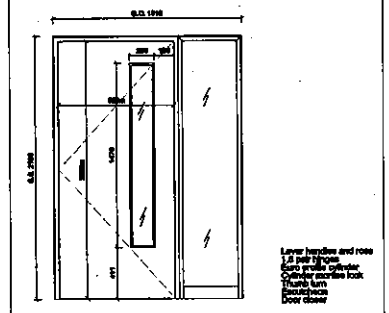
1.5 pair hinges
Lever handles and rose
Marties Bathroom Lock
Symbol 'Male/Female'
Bathroom Indicator & Large Turn

Type D11 Dis WC — Paint Finish



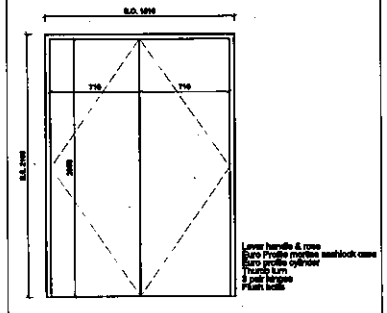
2 pair hinges
Pullpush handles
Door closer
Kick Plates

Type D12 Lobby Double Doors — Veneered Finish



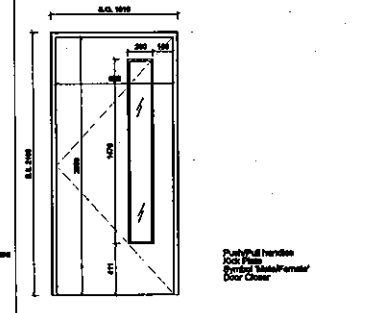
Lever handles and rose
1.5 pair hinges
Euro profile cylinder
Cylinder mortise lock
Thumb turn
Escutcheon
Door closer

Type D13 Office Door & Glazed Screen FD60s — Veneered Finish



Lever handle & rose
Euro Profile marties sashlock case
Euro profile cylinder
Thumb turn
2 pair hinges
Kick bolts

Type D14 Chair Store — Veneered Finish



Push/Pull handles
Kick Plate
Symbol 'Male/Female'
Door Closer

Type D15 WC Lobby — Paint Finish

NOTE

1. THIS DRAWING IS COPYRIGHT STUDIO E ARCHITECTS LTD.
2. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY. CONTRACTOR MUST CHECK ALL DIMENSIONS ON SITE.
3. [illegible]
4. [illegible]

FOR INFORMATION

STUDIO E ARCHITECTS LTD

Merck EnviRecover

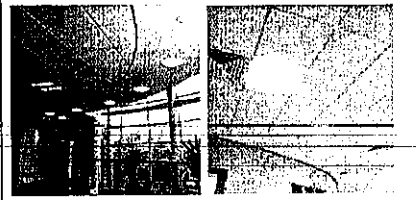
Office Block
Door Schedule

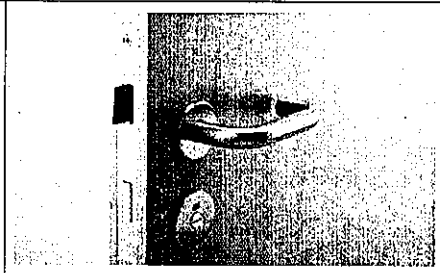
1:20@A1 06.10.10

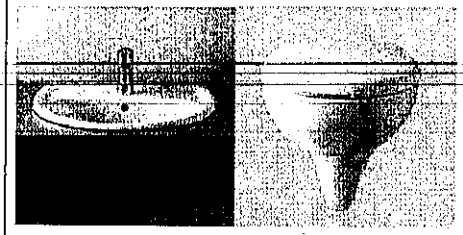
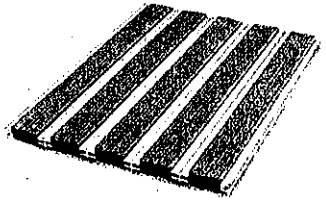
1204-EL700

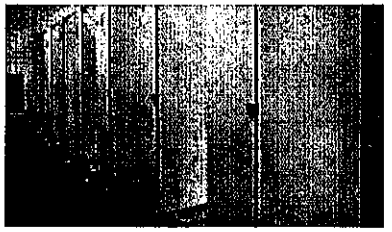
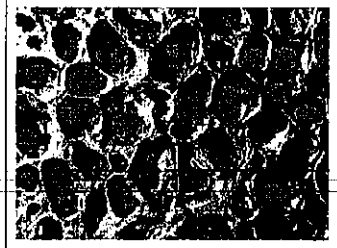
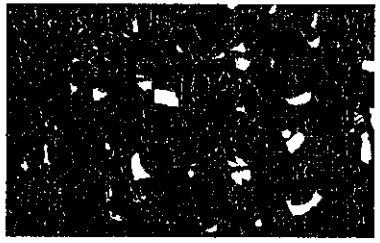
Appendix B – Architect Specification

1204 Mercia EnviRecover
Office Accommodation – Finishes and Fittings Specification

NBS Spec reference	Element	Description	Supplier and reference	
K10	Partitions/Dry lining	Metal stud & plasterboard partitions generally: - 1 x 12.5mm plasterboard to both sides of 70mm stud @ 600mm cts. - Taped and skimmed joints - Boards to extend full height for acoustic separation between rooms. - 25mm isowool insulation to achieve a max. 42dB acoustic insulation throughout.	British Gypsum	
K10	Fire rated partitions around stair lift lobby	Full height partitions with 1 layer of 15mm fire line board to achieve 60mins fire rated performance	British Gypsum	
K10	Wall lining system to blockwork	1 layer of plasterboard to liner channel	British Gypsum	
K40	Suspended Ceilings	Lay in grid ceilings generally: - 600 x 600 24mm grid - Mineral acoustic tiles	Armstrong "Dune Max Tegular"	
K40	Plasterboard margins/ceilings	Gypsum MF system 1 layer of 12.5mm plasterboard	British Gypsum	
L20	Veneer Doors Fire and non fire rated	44mm thk. Solid timber doors veneered with Hardwood lipping refer to door schedule and plans	FSC accredited	
L20	Paint Grade Riser Doors Fire and non Fire Rated	44mm thk. Paint Grade doors refer to door schedule and plans	FSC accredited	
L20	Doors – sliding folding	Acoustic rating: 44dB	Kaba Hufcor, London Wall etc	
P20	Architraves/skirting/window board	Timber architraves to match door veneer Painted MDF Skirting Painted MDF window boards	FSC accredited FSC accredited FSC accredited	
P20	Pattress	Internal quality plywood inserted into partitions to provide fixing points for handrails.	FSC accredited	

NBS Spec reference	Element	Description	Supplier and reference	
P21	Ironmongery	Satin Stainless steel Refer to door schedule	NT Laidlaw - Orbis Range	
	Access Control	Keypad/swipe card access as necessary		
L10	Internal glazed screens	12.8mm laminated glass to offices	Optima 117	
L10	Fire rated Internal glazed screens to GF lobby and kitchen	15mm pyrostop		
M50	Floor Coverings – offices, passages,	Carpet tile 500x500	Desso "Essence"	
M50	Floor finish – toilets, kitchen, mess room	Sheet vinyl anti-slip	Armstrong "Safeguard"	
M50	Floor finishes – wet areas	Ceramic tile 150x150 Category "C" slip resistance Universal skirting tiles"	Swedecor "Kartal"	
M60	Stairs – handrails	Painted steel		

NBS Spec reference	Element	Description	Supplier and reference	
M50	Stairs - Flooring	Vinyl as above Nosings: Aluminium nosing strips with PVC inserts	Gradus	
M60	Paint finish	Emulsion walls and ceilings Gloss to timber Gloss to metal work	Crown paints	
Sanitaryware				
N13	WC / Wash hand basins	Mid-range - Wall mounted WC pans with concealed cisterns - Vanity inset wash hand basins	Twyford Galerie	
N13	Ambulant WC	Part M package	Twyford	
	Brassware	To M&E engineer		
N10	Entrance mat		Nuway Tuftiguard Classic 12mm - Aluminium scraper bars	
Fittings				

NBS Spec reference	Element	Description	Supplier and reference	
N10	Toilet and shower Cubicles	Solid Grade laminate cubicles and doors Solid grade laminate duct panel systems	Prospec Marathon 600/700	
N10	Lockers	Solid grade laminate doors; aluminium door frames Standard CAM locking	Prospec Marathon Lockers	
N10	Reception desk	Back lit Aluminium Foam Panels for front of desk & Wall cladding	Alusion Large Cell Open Two Sides (Translucent) AL-FG-0.5-LG-2S	
	Reception desk	Counter / worktop	Glasseco Ecocrete Lite	
N10	Blinds	Internal roller blinds to external windows	Levolux 710 Roller Blind	
N11	Kitchen	Base/wall units as indicated on drawings		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Corridor**	**Date of origin:**	Aug-10
Room Number	**A625**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Corridor	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 54.5	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors** Finish	Floating Screed Carpet	M10
2.2	**Walls** Finish	Plasterboard Partitions Plasterboard Wall Lining Paint	K10 K10 M60
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	N/A	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	100 Lux at floor level with good flow of light along corridor to light faces		**Control**		High Frequency Control Gear Time control Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**	Intruder detection						
3.6	**Other**							

4.0	**Fittings**		**Spec Ref**
	Painted skirtings		P20

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A624**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Vinyl with contrasting nosing	M50
2.2	**Walls**	Plasterboard Partitions	K10
		140mm Blockwork	F10
		Plasterbord Wall Lining	K10
	Finish	Paint	M60
2.3	**Ceilings**	Painted Soffit	M60
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30
	Painted MDF Skirtings	P20

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A623**	**Level**	Fourth Floor (4)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	17.2					
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**						**Spec Ref**	
2.1	**Floors**	Floating Screed					M10	
	Finish	Carpet					M50	
2.2	**Walls**	Plasterboard Partitions		Fire rated			K10	
		140mm Blockwork					K10	
		Plasterbord Wall Lining					K10	
	Finish	Paint					M60	
2.3	**Ceilings**	Lay in Mineral Tile					K10	
2.4	**Door/s & Lock Type**	Solid Timber Veneered					L20	
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**							
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux		**Control**		High Frequency Control Gear		
		Lighting to the lift				Manual switching		
		controls and						
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**						**Spec Ref**	
	Internal blinds							

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A622**	**Level**	Fourth Floor (4)

1.0	**General**						
1.1	**Use**	Office					
1 2	**Occupancy**						
1 3	**Dimensions**	Area (m2) 15.4					
1.4	**Planning Relationships**						
1 5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
	Finish	Carpet tile			M50		
2 2	**Walls**	Plasterboard Partitions			K10		
	Finish	Paint			M60		
2 3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2 5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder extracted via adjacent washrooms		BMS Control. Local Room Controllers
3 2	**Lighting**	Average Daylight Factor 5% (min 0 5) 300-500lux (minimum 200lux). 30% of light on soffit. 300 for purely screen based work or 500 for mixed or mainly paper-based tasks. Colour rendering of Ra80 or above. Uniformity 0.8 in working zone. Max lighting load 12W/m2 200 lux in circulation zones		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones. Manual Switching. Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.		
3 3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3 3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3 5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2 5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC			Winter Dry Bulb -4degC Winter Wet Bulb -4degC		
4.0	**Fittings**				**Spec Ref**		
	Internal Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A621**	**Level**	Fourth Floor (4)

1.0	**General**						
1.1	**Use**	Office					
1.2 1.3 1.4	**Occupancy** **Dimensions** **Planning Relationships**	Area (m2) 18.1					
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
	Finish	Carpet tile			M50		
2.2	**Walls**	Plasterboard Partitions			K10		
	Finish	Paint			M60		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C FCU - 20degC min CHB - 22degC min	Summer Temp C FCU 22+/-2degC 24max CHB 24+/-2degC 26max	Air Humidity FCU 55% +/-10 CHB 45% +/-10 Min 35%	Vent supply 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder extracted via adjacent washrooms	Vent Extract	Control BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux). 30% of light on soffit. 300 for purely screen based work or 500 for mixed or mainly paper-based tasks. Colour rendering of Ra80 or above. Uniformity 0.8 in working zone. Max lighting load 12W/m2 200 lux in circulation zones		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones. Manual Switching. Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Internal blinds						

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	Office	Date of origin:	Aug-10
Room Number	A618	Level	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 18.1	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Carpet tile	M50
2.2	**Walls**	Plasterboard Partitions	K10
	Finish	Paint	M60
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

		Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
3.1	**Environment**	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder extracted via adjacent washrooms		BMS Control. Local Room Controllers

FCU= Fan Coil Units or VRF
CHB=Active Chilled Beams

3.2	**Lighting**	Average Daylight Factor 5% (min 0 5) 300-500lux (minimum 200lux). 30% of light on soffit. 300 for purely screen based work or 500 for mixed or mainly paper-based tasks. Colour rendering of Ra80 or above. Uniformity 0.8 in working zone. Max lighting load 12W/m2 200 lux in circulation zones	**Control** High Frequency Control Gear Daylight linked control to office perimeter zones. Manual Switching. Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted	

3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per person	For Secretaries			

3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.
3.5	**Panic Alarm/ Security**	P R detectors and window contactors.
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2 5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC

4.0	**Fittings**	**Spec Ref**
	Internal blinds	N10
	Painted MDF Skirting	P20

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A619**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Carpet tile	M50
2.2	**Walls**	Plasterboard Partitions	K10
	Finish	Paint	M60
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted.					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Internal blinds	N10
	painted MDF skirting	P20

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A620**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Internal blinds	

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A617**	**Level**	Fourth Floor (4)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 15					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Internal blinds						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A616**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Internal blinds	

ROOM DATA SHEET

Project	**1204**	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A615**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 17.8	
1.4	**Planning Relationships**		
1.5	**Fire**		

2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Doors & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder extracted via adjacent washrooms		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0 5) 300-500lux (minimum 200lux). 30% of light on soffit. 300 for purely screen based work or 500 for mixed or mainly paper-based tasks. Colour rendering of Ra80 or above. Uniformity 0.8 in working zone. Max lighting load 12W/m2 200 lux in circulation zones		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones. Manual Switching. Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Internal blinds	

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Meeting Room**	**Date of origin:**	Aug-10
Room Number	**A609**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 33.9	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Carpet tile	M50
2.2	**Walls**	Plasterboard Partitions	K10
	Finish	Paint	M60
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person supply and extract		PIR Control (hi/lo). Local temperature and fan control
3.2	**Lighting**	300 lux for normal meetings 500lux where more intensive reading and writing is carried out. Lighting trach for spot lights		**Control**	Manual switching in banks. High Frequency Control Gear Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.		
3.3	**Acoustic Req'mts Requirements**	NR35					
3.3	**Communications**	Telephone Yes	Computer yes	Fax	TV socket yes	FM socket yes	Other Projector
3.4	**Power sockets**	Floor boxes under tables Soffit mounted power sockets for projector					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

4.0	**Fittings**	**Spec Ref**
	Internal Blinds	N10
	Painted MDF skirtings	P10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A610**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 37.8	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms.	Extract 80% of supply, with remainder	BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Internal Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Male WC**	**Date of origin:**	Aug-10
Room Number	**A614**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Toilets	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15.5	
1.4	**Planning Relationships**		
1.5	**Fire**		

2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Non slip Vinyl	M50
2.2	**Walls**	Plasterboard Partitions	K10
	Finish	Paint	M60
2.3	**Ceilings**	Lay in Mineral Tile Acoustic performance	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					

4.0	**Fittings**	**Spec Ref**
	Urinals	N13
	WC pans	N13
	Vanity units	N13
	Duct panels througout	K32
	Vanity screen	K32
	Ambulent package to WC	
	Hand dryers	N13
	Mirrors above vanity	N13

STUDIO **E** ARCHITECTS

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Female WC**	**Date of origin:**	Aug-10
Room Number	**A613**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Toilets	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15.5	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
	Finish	Non slip Vinyl	
2.2	**Walls**	Plasterboard Partitions	K10
	Finish	Paint	
2.3	**Ceilings**	Lay in Mineral Tile Acoustic performance	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					

4.0	**Fittings**	**Spec Ref**
	WC pans	N13
	Vanity units	N13
	Duct panels througout	K32
	Vanity screen	N13
	Ambulent package to WC	
	Hand dryers	N13
	Mirrors above vanity	N13

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	Dis. WC	Date of origin:	Aug-10
Room Number	A612	Level	Fourth Floor (4)

1.0	**General**							
1.1	Use	WC						
1.2	Occupancy							
1.3	Dimensions	Area (m2) 3.3						
1.4	Planning Relationships							
1.5	Fire							
2.0	**Building Elements**				**Spec Ref**			
2.1	Floors	Floating Screed			M10			
	Finish	Non Slip vinyl						
2.2	Walls	Plasterboard Partitions			K10			
	Finish	Paint						
2.3	Ceilings	Lay in Mineral Tile			K10			
2.4	Door/s & Lock Type	Solid Timber Veneered			L20			
2.5	Degree of Privacy							
2.6	Windows	N/A						
2.7	Glazed Screen	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	Environment	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		21degC min.	Not controlled	Not controlled	-	10 air changes per hour	PIR control on fans and lighting	
3.2	Lighting	200 lux IP65 fittings		Control	PIR control and switch			
3.3	Acoustic Req'mts	NR45						
3.3	Communications	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	Power sockets	Fuse spur for hand dryers						
3.5	Panic Alarm/ Security	Disabled Toilet Alarm						
3.6	Other	Deisgned to meet Doc M. Floor gulley Water connections to WC and wash hand basin						
4.0	**Fittings**				**Spec Ref**			
	Part M package				N13			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Kitchen**	**Date of origin:**	Aug-10
Room Number	**A611**	**Level**	Fourth Floor (4)

1.0	**General**							
1.1	**Use**	Kitchen						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 6.6						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
	Finish	Non Slip vinyl						
2.2	**Walls**	Plasterboard Partitions			K10			
	Finish	Vinyl						
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		18degC	not controlled	not controlled	Extract hood over cooking area		Local Controls	
3.2	**Lighting**	500lux		**Control**	High Frequency Control Gear Manual Switching.			
3.3	**Acoustic Req'mts**							
3.3	**Communications**	Telephone Yes	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Hard wired power supplies to electrical appliances Power sockets above work surfaces						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Gas connections to cookers and hobs. Drainage and H&C water connections as required.						
	Fridge				N11			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Store**	**Date of origin:**	Aug-10
Room Number	**A605**	**Level**	Fourth Floor (4)

1.0	**General**						
1.1	**Use**	Control Room					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2)	14.8				
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			K41		
	Finish	Vinyl			M50		
2.2	**Walls**	Plasterboard Partitions		Fire rated	K10		
	Finish	Paint			M60		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered		Fire rated	L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		15 degC	not controlled	not controlled	not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux for simple bulk storage and 300 Lux for storage and selection of small items. 200 Lux vertically for fronts of shelving		**Control**	Manual Switching Timer		
3.3	**Acoustic Req'mts Requirements**	None					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Yes					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A606**	**Level**	Fourth Floor (4)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 8.3						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining			K10 F10 K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		20degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A607**	**Level**	Fourth Floor (4)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Waiting Area**	**Date of origin:**	Aug-10
Room Number	**A604**	**Level**	ThirdFloor (3)

1.0	**General**						
1.1	**Use**	Waiting Area					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 89					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			K41		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC min.	26deg C max	Not controlled	10l/s person	As supply	BMS Controls
3.2	**Lighting**	200 lux general, 300 lux over seating areas. Local lighting to plant areas, displays, notice boards etc		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes			Yes	Yes	
3.4	**Power sockets**	Floor boxes under table Power and data sockets for wall mounted display screens (TV and Network)					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						
4.0	**Fittings**				**Spec Ref**		
	Internal Blinds				N10		

ROOM DATA SHEET

Project	**1204**	**File Ref**	
Room Name	**Corridor**	**Date of origin:**	Aug-10
Room Number	**A602**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Corridor						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	14.3					
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Floating screed						
2.2	**Walls**	Plasterboard Partitions		Fire rated		K10		
2.3	**Ceilings**	Lay in mineral tile				K10		
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled		not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux		**Control**		Manual Switching		
3.3	**Acoustic Req'mts Requirements**	None						
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**							

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Escape Stair**	**Date of origin:**	Aug-10
Room Number	**A601**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Precast Concrete stairs						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**							
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**					**Spec Ref**		
	Painted 40mm dia handrails					L30		

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	**Control Room**	Date of origin:	Aug-10
Room Number	**A603**	Level	ThirdFloor (3)

1.0	**General**							
1.1	**Use**	Control Room						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 140.1						
1.4	**Planning Relationships**							
1.5	Fire							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Raised Floor			K41			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		20degC min	24+/-2degC 26max	No control	10l/s person	10l/s	Local Room Controller	
3.2	**Lighting**	500lux Linear fluorescent		**Control**	Manual Switching			
3.3	**Acoustic Req'mts**	NR 38						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
		Yes	Yes	Yes	Yes			
3.4	**Power sockets**	Dedicated 3 phase supply. UPS back-up						
3.5	**Panic Alarm/ Security**	Restricted Access Control						
3.6	**Other**	Gaseous Fire Protection System?						
4.0	**Fittings**				**Spec Ref**			
	Internal Blinds				N10			
	Kitchen Base and Wall Units				N11			
	Fridge				N11			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	Corridor	**Date of origin:**	Aug-10
Room Number	**A602**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Corridor						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Precast Concrete stairs						
2.2	**Walls**	Plasterboard Partitions		Fire rated	K10			
2.3	**Ceilings**	Lay in mineral tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors	L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		not controlled	not controlled	not controlled	not controlled	not controlled	not controlled	
3.2	**Lighting**	200 Lux		**Control**	Manual Switching			
3.3	**Acoustic Req'mts Requirements**	None						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**							

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Escape Stair**	**Date of origin:**	Aug-10
Room Number	**A601**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**						**Spec Ref**	
2.1	**Floors**	Precast Concrete stairs						
2.2	**Walls**	140mm Blockwork Paint Grade					F10	
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors			L20	
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		not controlled	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**							
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**						**Spec Ref**	
	Painted 40mm dia handrails						L30	

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Kitchen**	**Date of origin:**	Aug-10
Room Number	**A506**	**Level**	Third Floor (3)

1.0	**General**						
1.1	**Use**	Kitchen					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 6.6					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions		Fire rated	K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered		Fire rated	L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	Up to 35 air changes hour. Dedicated supply air handling unit. Extract canopy over cooking range (special installation). Flue to roof.		BMS and Local controllers Fans linked to Gas Safe Guard Panel
3.2	**Lighting**	500lux		**Control**	High Frequency Control Gear Manual Switching.		
3.3	**Acoustic Req'mts**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	in kitchen office				
3.4	**Power sockets**	dedicated 3 phase distribution board. Hard wired power supplies to electrical appliances Power sockets above work surfaces					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Gas connections to cookers and hobs. Gas Safe Guard Panel Drainage and H&C water connections as required. Dedicated condenser hood extraction system over dishwasher. Insect guard					
4.0	**Fittings**				**Spec Ref**		
	Fridge				N11		

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	Dis. WC	Date of origin:	Aug-10
Room Number	A507	Level	Third Floor (3)

1.0	General							
1.1	Use	WC						
1.2	Occupancy							
1.3	Dimensions	Area (m2) 3.3						
1.4	Planning Relationships							
1.5	Fire							
2.0	Building Elements				Spec Ref			
2.1	Floors	Floating Screed			M10			
2.2	Walls	Plasterboard Partitions			K10			
2.3	Ceilings	Lay in Mineral Tile			K10			
2.4	Door/s & Lock Type	Solid Timber Veneered			L20			
2.5	Degree of Privacy							
2.6	Windows	N/A						
2.7	Glazed Screen	N/A						
3.0	Services - Refer to Services Specification							
3.1	Environment	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		21degC min.	Not controlled	Not controlled		10 air changes per hour	PIR control on fans and lighting	
3.2	Lighting	200 lux IP65 fittings		Control	PIR control and switch			
3.3	Acoustic Req'mts	NR45						
3.3	Communications	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	Power sockets	Fuse spur for hand dryers						
3.5	Panic Alarm/ Security	Disabled Toilet Alarm						
3.6	Other	Deisgned to meet Doc M. Water connections to WC and wash hand basin. Floor gully						
4.0	Fittings				Spec Ref			
	Part M package				N13			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Female WC**	**Date of origin:**	Aug-10
Room Number	**A508**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Toilets	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15.1	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile Acoustic performance	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Male WC**	**Date of origin:**	Aug-10
Room Number	**A509**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Toilets	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15.5	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile Acoustic performance	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						
		Water connections to WC and wash hand basin					

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	**Visitors Centre**	Date of origin:	Aug-10
Room Number	**A504**	Level	Third Floor (3)

1.0	**General**							
1.1	**Use**	Auditiorium						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 97.4						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile Acoustic performance			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	Optima glazing System			L10			
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		22-23degC	24-25degC	50%+/-10%	10l/s person	10l/s person	BMS Controlled	
3.2	**Lighting**	300 lux general. 500 lux at screen/writing areas		**Control**	Scene Setting Lighting Control System			
3.3	**Acoustic Req'mts**	Plant noise NR30						
3.3	**Communications**	Telephone Yes	Computer Yes	Fax	TV socket Yes	FM socket Yes	Other Induction Loop/ RF Radio Reinforcement system	
3.4	**Power sockets**	For projector and computer locations.						
3.5	**Panic Alarm/ Security**	PIR detectors						
3.6	**Other**	Air Leakage Rate 5m3/hr/m2 @50pa.						
4.0	**Fittings**				**Spec Ref**			
	Manifestation				L10			
	Black Out Blinds				N10			
	Dividing Partition				L20			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Chair Store**	**Date of origin:**	Aug-10
Room Number	**A512**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 10.8	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**		

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		15 degC	not controlled	not controlled	not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux		**Control**	Manual Switching Timer		
3.3	**Acoustic Req'mts Requirements**	None					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**						
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Sever**	**Date of origin:**	Aug-10
Room Number	**A512**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 5.7	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	22degC	50% +/-10	10l/s per person.		Close Control. Local Controllers
3.2	**Lighting**	500lux		**Control**	High Frequency Control Gear Manual Switching.		
3.3	**Acoustic Req'mts**	NR 45					
3.3	**Communications**	Telephone Yes	Computer Yes	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Dedicated Distribution board with 3 phase supply					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	UPS back-up Dedicated cooling installation - VRV splits. Gaseous Fire Suppression System?					

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	Office	Date of origin:	Aug-10
Room Number	A512	Level	Third Floor (3)

1.0	**General**		
1.1	Use	Office	
1.2	Occupancy		
1.3	Dimensions	Area (m2) 24 3	
1.4	Planning Relationships		
1.5	Fire		
2.0	**Building Elements**		**Spec Ref**
2.1	Floors	Floating Screed	M10
2.2	Walls	Plasterboard Partitions	K10
2.3	Ceilings	Lay in Mineral Tile	K10
2.4	Door/s & Lock Type	Solid Timber Veneered with glazed side light	L20/L10
2.5	Degree of Privacy		
2.6	Windows	N/A	
2.7	Glazed Screen	See door Schedule	

3.0 Services - Refer to Services Specification

		Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
3.1	Environment FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder extracted via adjacent washrooms		BMS Control. Local Room Controllers

3.2	Lighting	Average Daylight Factor 5% (min 0 5) 300-500lux (minimum 200lux). 30% of light on sof it. 300 for purely screen based work or 500 for mixed or mainly paper-based tasks. Colour rendering of Ra80 or above. Uniformity 0.8 in working zone. Max lighting load 12W/m2 200 lux in circulation zones	**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones. Manual Switching. Separate switching to internal and perimeter zones. Time control Manual controlled blinds for glare control.
3.3	Acoustic Req'mts	NR 38 - measured with office empty and no carpet fitted		
3.3	Communications	Telephone: Yes Computer: Min 2 data sockets per person Fax: For Secretaries TV socket: FM socket: Other:		
3.4	Power sockets	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.		
3.5	Panic Alarm/ Security	P R detectors and window contactors.		
3.6	Other	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC		

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	Office	Date of origin:	Aug-10
Room Number	A513	Level	Third Floor (3)

1.0	**General**		
1.1	Use	Office	
1.2	Occupancy		
1.3	Dimensions	Area (m2) 24.3	
1.4	Planning Relationships		
1.5	Fire		
2.0	**Building Elements**		**Spec Ref**
2.1	Floors	Floating Screed	M10
2.2	Walls	Plasterboard Partitions	K10
2.3	Ceilings	Lay in Mineral Tile	K10
2.4	Door/s & Lock Type	Solid Timber Veneered with glazed side light	L20/L10
2.5	Degree of Privacy		
2.6	Windows	N/A	
2.7	Glazed Screen	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	Environment	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	Lighting	Average Daylight Factor 5% (min 0.5)		Control	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	Acoustic Req'mts	NR 38 - measured with office empty and no carpet fitted					
3.3	Communications	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	Power sockets	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	Panic Alarm/ Security	PIR detectors and window contactors.					
3.6	Other	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A514**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C: FCU - 20degC min; CHB - 22degC min	Summer Temp C: FCU 22+/-2degC 24max; CHB 24+/-2degC 26max	Air Humidity: FCU 55% +/-10; CHB 45% +/-10; Min 35%	Vent supply: 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with	Vent Extract	Control: BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear. Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone: Yes	Computer: Min 2 data sockets per	Fax: For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A515**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

		Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers

3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)	**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted		

3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			

3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Reception**	**Date of origin:**	Aug-10
Room Number	**A502**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 136.6	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min. Local heating to	26deg C max	Not controlled	10l/s person	As supply	Local Controls
3.2	**Lighting**	200 lux general, 300 lux over reception desks and seating areas.		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Yes	Yes	Yes	Yes	Induction Loop
3.4	**Power sockets**	To reception desk , seating areas and display areas Power and data sockets for wall mounted display screens (TV and Network)					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A503**	**Level**	Third Floor (3)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 8.3						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**							
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		20degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A517**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 17.1	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**		

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A518**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A501**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Escape Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**						
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A516**	**Level**	Third Floor (3)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 24.7					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Reception**	**Date of origin:**	Aug-10
Room Number	**A502**	**Level**	Third Floor (3)

1.0	**General**						
1.1	**Use**	Lift Lobby					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 136.6					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min. Local heating to	26deg C max	Not controlled	10l/s person	As supply	Local Controls
3.2	**Lighting**	200 lux general, 300 lux over reception desks and seating areas.		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Yes	Yes	Yes	Yes	Induction Loop
3.4	**Power sockets**	To reception desk , seating areas and display areas Power and data sockets for wall mounted display screens (TV and Network)					
3.5	**Panic Alarm/ Security**	Security Panels at/near reception desk (CCTV, IDS, Access Control)					
3.6	**Other**						
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A503**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 8.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**		

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A517**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 17.1	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**		

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer--	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					
4.0	**Fittings**				**Spec Ref**		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A518**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A503**	**Level**	Third Floor (3)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Cleaners Store**	**Date of origin:**	Aug-10
Room Number	**A405**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	Store						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 1.8						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type Privacy**	Solid Timber Veneered			L20			
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		not controlled	not controlled	not controlled	Extract 6 air changes hour. Connected to adjacent WC extract		PIR controlled	
3.2	**Lighting**	200 Lux		**Control**	Manual switching Timer			
3.3	**Acoustic Req'mts Requirements**	None						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**							
3.5	**Panic Alarm/ Security**							
3.6	**Other**	sink with hot and cold water floor gully						
4.0	**Fittings**				**Spec Ref**			
	WC pan				N13			
	WHB				N13			
	HPL Duct panelling				K32			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**WC**	**Date of origin:**	Aug-10
Room Number	**A406**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	WC					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 2.2					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryer					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					
4.0	**Fittings**				**Spec Ref**		
	WC pan				N13		
	WHB				N13		
	HPL Duct panelling				K32		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**WC**	**Date of origin:**	Aug-10
Room Number	**A404**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	WC					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 2.2					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryer					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					
4.0	**Fittings**				**Spec Ref**		
	WC pan				N13		
	WHB				N13		
	HPL Duct panelling				K32		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Dis WC**	**Date of origin:**	Aug-10
Room Number	**A403**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	WC						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	5.3					
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Floating Screed				M10		
2.2	**Walls**	Plasterboard Partitions				K10		
2.3	**Ceilings**	Lay in Mineral Tile				K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered				L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		21degC min.	26max if cooling provided	Not controlled		8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**		PIR control and switch		
3.3	**Acoustic Req'mts**	NR45						
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers						
3.5	**Panic Alarm/ Security**	Disabled Toilet Alarm						
3.6	**Other**	Deisgned to meet Doc M. Water connections to WC and wash hand basin						
4.0	**Fittings**					**Spec Ref**		
	Part M Toilet package					N13		
	Blinds					N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A401**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining			K10 F10 K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		18degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**				**Spec Ref**			
	Painted 40mm dia handrails				L30			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A402**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	13.4					
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Floating Screed				M10		
2.2	**Walls**	Plasterboard Partitions				K10		
2.3	**Ceilings**	Lay in Mineral Tile				K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered				L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**							
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A415**	**Level**	Second Floor (2)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.7	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C FCU - 20degC min CHB - 22degC min	Summer Temp C FCU 22+/-2degC 24max CHB 24+/-2degC 26max	Air Humidity FCU 55% +/-10 CHB 45% +/-10 Min 35%	Vent supply 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with	Vent Extract	Control BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A414**	**Level**	Second Floor (2)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.4	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A413**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 24.4					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Kitchen**	**Date of origin:**	Aug-10
Room Number	**A412**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	Kitchen						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 24.3						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control	
		18degC	not controlled	not controlled	Up to 35 air changes hour. Dedicated supply air handling unit. Extract canopy over cooking range (special installation).		BMS and Local controllers Fans linked to Gas Safe Guard	
3.2	**Lighting**	500lux		**Control**	High Frequency Control Gear Manual Switching.			
3.3	**Acoustic Req'mts**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
		Yes	in kitchen office					
3.4	**Power sockets**	dedicated 3 phase distribution board. Hard wired power supplies to electrical appliances						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Gas connections to cookers and hobs. Drainage and H&C water connections as required.						
	Fridge				N11			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A411**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 24.3					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A410**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 24.3					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C FCU - 20degC min CHB - 22degC min	Summer Temp C FCU 22+/-2degC 24max CHB 24+/-2degC 26max	Air Humidity FCU 55% +/-10 CHB 45% +/-10 Min 35%	Vent supply 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with	Vent Extract	Control BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A409**	**Level**	Second Floor (2)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C FCU - 20degC min CHB - 22degC min	Summer Temp C FCU 22+/-2degC 24max CHB 24+/-2degC 26max	Air Humidity FCU 55% +/-10 CHB 45% +/-10 Min 35%	Vent supply 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with	Vent Extract	Control BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A408**	**Level**	Second Floor (2)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2)	24.3				
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A416**	**Level**	Second Floor (2)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 17.2						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	See door Schedule						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		20degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A417**	**Level**	Second Floor (2)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**		**Spec Ref**
	Painted 40mm dia handrails		L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Corridor**	**Date of origin:**	Aug-10
Room Number	**A407**	**Level**	Second Floor (2)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 91.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions Plasterboard Wall Lining	K10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	N/A	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled	not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux		**Control**	Manual Switching		
3.3	**Acoustic Req'mts Requirements**	None					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

STUDIO **E** ARCHITECTS

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A300**	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	Corridor	**Date of origin:**	Aug-10
Room Number	A308	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 87	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions Plasterboard Wall Lining	K10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	N/A	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled	not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux		**Control**	Manual Switching		
3.3	**Acoustic Req'mts Requirements**	None					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A310**	**Level**	First Floor (1)

1.0	**General**						
1.1	**Use**	Stair					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 16.9					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining			K10 F10 K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					
4.0	**Fittings**				**Spec Ref**		
	Painted 40mm dia handrails				L30		

STUDIO **E** ARCHITECTS

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Cleaners Store**	**Date of origin:**	Aug-10
Room Number	**A311**	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Store	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 1.5	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	N/A	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		not controlled	not controlled	not controlled	Extract 6 air changes hour.		PIR controlled
3.2	**Lighting**	200 Lux		**Control**	Manual switching Timer		
3.3	**Acoustic Req'mts Requirements**	None					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**						
3.5	**Panic Alarm/ Security**						
3.6	**Other**	sink with hot and cold water floor gully					

4.0	**Fittings**	**Spec Ref**
	Butlers sink	N12
	Shelving	N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A309**	**Level**	First Floor (1)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 16.9						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Floating Screed			M10			
2.2	**Walls**	Plasterboard Partitions			K10			
2.3	**Ceilings**	Lay in Mineral Tile			K10			
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	See door Schedule						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		20degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Male Changing**	**Date of origin:**	Aug-10
Room Number	**A307**	**Level**	First Floor (1)

1.0	**General**						
1.1	**Use**	Changing/Wet Area					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 58.8					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
	Finish	Non Slip Tiling			M50		
2.2	**Walls**	Plasterboard Partitions		Fire rated	K10		
	Finish	Full height tiling to showers			M50		
		Paint					
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		22degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Floor gullies in changing areas.					
		Water connections to WCs, wash hand basins and showers					
4.0	**Fittings**				**Spec Ref**		
	HPL Duct panelling to WC				K32		
	HPL shower cubicles				K32		
	Vanity Unit				N10		
	Ambulent WC pack						
	Hand dryer						
	Dis. Shower pack						
	Lockers				N10		
	Benching				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Female Changing**	**Date of origin:**	Aug-10
Room Number	**A306**	**Level**	First Floor (1)

1.0	**General**						
1.1	**Use**	Changing/Wet Area					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 47.4					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
	Finish	Non Slip Tiling			M50		
2.2	**Walls**	Plasterboard Partitions		Fire rated	K10		
	Finish	Full height tiling to showers			M50		
		Paint					
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		22degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Floor gullies in changing areas.					
		Water connections to WCs, wash hand basins and showers					

4.0	**Fittings**	**Spec Ref**	
	HPL Duct panelling to WC	K32	
	HPL shower cubicles	K32	
	Vanity Unit	N10	
	Ambulent WC pack		
	Hand dryer		
	Dis. Shower pack		
	Lockers	N10	
	Benching	N10	

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Mess Room**	**Date of origin:**	Aug-10
Room Number	**A305**	**Level**	First Floor (1)

1.0	**General**							
1.1	**Use**	Mess room						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	55.4					
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**							**Spec Ref**
2.1	**Floors**	Floating Screed						M10
	Finish	Carpet						M50
		Vinyl to Kitchen Area						M50
2.2	**Walls**	Plasterboard Partitions		Fire rated				K10
	Finish	Paint						M60
		3 tile splash back to kitchen units						M50
		MDF Skirting						P20
2.3	**Ceilings**	Lay in Mineral Tile						K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered						L20
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	Glazed side light 30/30 Fire resistance						L10
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		21degC min.	26deg C max	Not controlled	10l/s person	As supply	Local Controls	
3.2	**Lighting**	150-300 lux, Lighting scheme to create enhanced		**Control**	Manual switching and time clock			
3.3	**Acoustic Req'mts**	NR40						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
		Yes			Yes	Yes		
3.4	**Power sockets**	Electrical supplies to Fridge. Dishwasher, Microwave Oven, Hob, Hot Water Boiler.						
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.						
3.6	**Other**	Air Leakage Rate 5m3/hr/m2 @50pa. Sink with hot and cold water supplies/drainage.						
4.0	**Fittings**							**Spec Ref**
	Internal Blinds							N10
	Kitchen Base and Wall units							N10
	Funiture to clients requirements							

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A304**	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 18.1	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

		Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers

3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).	**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted		

		Telephone	Computer	Fax	TV socket	FM socket	Other
3.3	**Communications**	Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

STUDIO **E** ARCHITECTS

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A303**	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15	
1.4	**Planning Relationships**		
1.5	**Fire**		

2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A302**	**Level**	First Floor (1)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Corridor**	**Date of origin:**	Aug-10
Room Number	**A216**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 63.7	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	100 Lux at floor level with good flow of light along corridor to light faces		**Control**	High Frequency Control Gear Time control		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**	Intruder detection					
3.6	**Other**						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A214**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A213**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 15.9	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions 140mm Blockwork Plasterbord Wall Lining	K10 F10 K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**		

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A212**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.7	
1.4	**Planning Relationships**		
1.5	**Fire**		

2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).	**Control**		High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A211**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with remainder		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5) 300-500lux (minimum 200lux).		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**		**Spec Ref**
	Blinds		N10

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A210**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Office	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 24.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	K10
2.3	**Ceilings**	Lay in Mineral Tile	K10
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light	L20/L10
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	See door Schedule	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment** FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	Winter Temp C FCU - 20degC min CHB - 22degC min	Summer Temp C FCU 22+/-2degC 24max CHB 24+/-2degC 26max	Air Humidity FCU 55% +/-10 CHB 45% +/-10 Min 35%	Vent supply 10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with	Vent Extract	Control BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone Yes	Computer Min 2 data sockets per	Fax For Secretaries.	TV socket	FM socket	Other
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					

4.0	**Fittings**	**Spec Ref**
	Blinds	N10

ROOM DATA SHEET

Project	**1204**	**File Ref**	
Room Name	**Office**	**Date of origin:**	Aug-10
Room Number	**A208**	**Level**	Ground Floor (0)

1.0	**General**						
1.1	**Use**	Office					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 24.3					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person. Average of 15-16l/s person at Air Handling Unit to take account of meeting rooms. Extract 80% of supply, with		BMS Control. Local Room Controllers
3.2	**Lighting**	Average Daylight Factor 5% (min 0.5)		**Control**	High Frequency Control Gear Daylight linked control to office perimeter zones.		
3.3	**Acoustic Req'mts**	NR 38 - measured with office empty and no carpet fitted					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Min 2 data sockets per	For Secretaries			
3.4	**Power sockets**	Small Power Load 25W/m2 (+ 5W/m2 in hot spots). 4 sockets per person. Additional sockets at printer/photocopier points.					
3.5	**Panic Alarm/ Security**	PIR detectors and window contactors.					
3.6	**Other**	Average Office Occupancy Density: 1 person 10m2. Meeting Rooms 1 person 2.5m2 Air Leakage Rate 5m3/hr/m2 @50pa. **Ambient Design Conditions:** Summer Dry Bulb 29degC Summer Wet Bulb 21degC Winter Dry Bulb -4degC Winter Wet Bulb -4degC					
4.0	**Fittings**				**Spec Ref**		
	Blinds				N10		

ROOM DATA SHEET

Project	**1204**	**File Ref**	
Room Name	**Meeting Room**	**Date of origin:**	Aug-10
Room Number	**A208**	**Level**	Ground Floor (0)

1.0	**General**						
1.1	**Use**	Meeting Room					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 35.6					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			K10		
2.3	**Ceilings**	Lay in Mineral Tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered with glazed side light			L20/L10		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	See door Schedule					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
	FCU= Fan Coil Units or VRF CHB=Active Chilled Beams	FCU - 20degC min CHB - 22degC min	FCU 22+/-2degC 24max CHB 24+/-2degC 26max	FCU 55% +/-10 CHB 45% +/-10 Min 35%	10l/s per person supply and extract		PIR Control (hi/lo). Local temperature and fan control
3.2	**Lighting**	300 lux for normal meetings 500lux where more intensive reading and		**Control**	Manual switching in banks. High Frequency Control Gear		
3.3	**Acoustic Req'mts Requirements**	NR35					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	yes		yes	yes	Projector
3.4	**Power sockets**	Floor boxes under tables Soffit mounted power sockets for projector					
3.5	**Panic Alarm/ Security**						
3.6	**Other**						
4.0	**Fittings**				**Spec Ref**		
	Internal Blinds				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Entrance**	**Date of origin:**	Aug-10
Room Number	**A215**	**Level**	Ground Floor (0)

1.0	**General**		
1.1	**Use**	Entrance	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 28.3	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating Screed	M10
2.2	**Walls**	Plasterboard Partitions	F10
2.3	**Ceilings**	Plasterboard Ceiling	K10
2.4	**Door/s & Lock Type**		
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degc	28 max	Not controlled	10l/s person	as supply	Local Controls
3.2	**Lighting**	200 lux general Local lighting to plant areas; displays; notice boards etc		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38					
3.3	**Communications**	Telephone Yes	Computer	Fax	TV socket Yes	FM socket Yes	Other
3.4	**Power sockets**	Power and data sockets for wall mounted display screens (TV and Network)					
3.5	**Panic Alarm/ Security**	Intruder detection					
3.6	**Other**						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Secure Reception**	**Date of origin:**	Aug-10
Room Number	**A204**	**Level**	Ground Floor (0)

1.0	**General**							
1.1	**Use**	Sreception Office						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 12						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Floating Screed				M10		
2.2	**Walls**	Plasterboard Partitions				F10		
2.3	**Ceilings**	Lay in Mineral Tile				K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered				L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		19degC min. Local heating to	26deg C max	Not controlled		10l/s person	As supply	Local Controls
3.2	**Lighting**	200 lux general, 300 lux over reception desks and seating areas. Local lighting to plant areas, displays, notice boards etc		**Control**		Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38						
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
		Yes	Yes	Yes		Yes	Yes	Induction Loop
3.4	**Power sockets**	To reception desk , seating areas and display areas Power and data sockets for wall mounted display screens (TV and Network)						
3.5	**Panic Alarm/ Security**	Security Panels at/near reception desk (CCTV, IDS, Access Control)						
3.6	**Other**							
4.0	**Fittings**					**Spec Ref**		
	Benching					N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**First Aid**	**Date of origin:**	Aug-10
Room Number	**A206**	**Level**	Ground Floor (0)

1.0	**General**						
1.1	**Use**	First Aid Room					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 6.2					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			F10		
2.3	**Ceilings**	Lay in mineral tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		22 degC	26deg C max	Not controlled	10l/s person	As supply	Local Controls
3.2	**Lighting**	300 lux general, 500 where medical examination may be needed.		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR 35					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Yes	Yes	Yes	Yes	Induction Loop
3.4	**Power sockets**	Yes					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Sink with H&C water connections and drainage					
4.0	**Fittings**				**Spec Ref**		
	Medical room equipment package				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Reception**	**Date of origin:**	Aug-10
Room Number	**A203**	**Level**	Ground Floor (0)

1.0	**General**							
1.1	**Use**	Reception						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 77.6						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Floating Screed				M10		
2.2	**Walls**	Plasterboard Partitions				F10		
2.3	**Ceilings**	Plasterboard				K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered				L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	30/30 fire rated glazing	1.2m x 1.2m			L10		
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		19degC min. Local heating to	26deg C max	Not controlled		10l/s person	As supply	Local Controls
3.2	**Lighting**	200 lux general, 300 lux over reception desks and seating areas. Local lighting to plant areas, displays, notice boards etc		**Control**		Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR38						
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
		Yes	Yes	Yes		Yes	Yes	Induction Loop
3.4	**Power sockets**	To reception desk , seating areas and display areas						
3.5	**Panic Alarm/ Security**	Security Panels at/near reception desk (CCTV, IDS, Access Control)						
3.6	**Other**	Air Leakage Rate 5m3/hr/m2 @50pa.						
4.0	**Fittings**					**Spec Ref**		
	Reception Desk					N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A202**	**Level**	Ground Floor (0)

1.0	**General**				
1.1	**Use**	Lift Lobby			
1.2	**Occupancy**				
1.3	**Dimensions**	Area (m2) 8.2			
1.4	**Planning Relationships**				
1.5	**Fire**				
2.0	**Building Elements**			**Spec Ref**	
2.1	**Floors**	Floating Screed		M10	
2.2	**Walls**	140mm Blockwork		F10	
		Plasterboard Wall Lining		K10	
		Plasterboard Partitions		K10	
2.3	**Ceilings**	Plasterboard		K10	
2.4	**Door/s & Lock Type**	Solid Timber Veneered	Fire doors	L20	
2.5	**Degree of Privacy**				
2.6	**Windows**	N/A			
2.7	**Glazed Screen**	30/30 fire rated glazing	1.2m x 1.2m	L10	

3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A201**	**Level**	Ground Floor (0)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**						**Spec Ref**	
2.1	**Floors**	Floating Screed					M10	
2.2	**Walls**	140mm Blockwork					F10	
		Plasterboard wall Lining					K10	
		Plasterboard Partitions					K10	
2.3	**Ceilings**	Plasterboard soffit to landings					K10	
2.4	**Door/s & Lock Type**	Solid Timber Veneered		Fire doors			L20	
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**						**Spec Ref**	
	Painted 40mm dia handrails						L30	

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A104**	**Level**	Lower Ground Floor (-1)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Precast Concrete stairs	
2.2	**Walls**	140mm Blockwork Paint Grade	F10
2.3	**Ceilings**	N/A	
2.4	**Door/s & Lock Type**	N/A	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	North Stair	**Date of origin:**	Aug-10
Room Number	A102	**Level**	Lower Ground Floor (-1)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**				**Spec Ref**			
2.1	**Floors**	Precast Concrete stairs						
2.2	**Walls**	140mm Blockwork Wall Lining System			F10 K10			
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors	L20			
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control	
		18degC	not controlled	not controlled	not controlled	not controlled	none	
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching			
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other	
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**				**Spec Ref**			
	Painted 40mm dia handrails				L30			

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Switch Room**	**Date of origin:**	Aug-10
Room Number	**A101**	**Level**	Lower Ground Floor (-1)

1.0	**General**							
1.1	**Use**	Switch Room						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2) 159.1						
					19.7 x 6.4			
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	RC slab						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**							
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		15degC min.	not controlled	Not controlled		none	3ach	Local Controls
3.2	**Lighting**	200 Lux general and 200 Lux vertically on sides of switchgear, etc		**Control**		Manual switching and time clock		
3.3	**Acoustic Req'mts**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Yes						
3.5	**Panic Alarm/ Security**							
3.6	**Other**							

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A103**	**Level**	Lower Ground Floor (-1)

1.0	**General**		
1.1	**Use**	Service Lift Lobby	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 34.2	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Floating screed	
2.2	**Walls**	140mm Blockwork Plasterboard wall Lining Plasterbaord partition	F10 K10 K10
2.3	**Ceilings**	Lay in Grid	K10
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade Fire doors	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0 Services - Refer to Services Specification

3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**South Stair**	**Date of origin:**	Aug-10
Room Number	**A009**	**Level**	Lower Ground Floor (-2)

1.0	**General**		
1.1	**Use**	Stair	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2)	
1.4	**Planning Relationships**		
1.5	**Fire**		
2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Precast Concrete stairs	
2.2	**Walls**	140mm Blockwork Paint Grade	F10
2.3	**Ceilings**	N/A	
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade Fire doors	
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled	not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**	High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Pressurised - dependent on fire strategy					

4.0	**Fittings**	**Spec Ref**
	Painted 40mm dia handrails	L30

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A008**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Service Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Concrete						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**North Stair**	**Date of origin:**	Aug-10
Room Number	**A002**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Stair						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Precast Concrete stairs						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		18degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	150 lux on all treads		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						
4.0	**Fittings**					**Spec Ref**		
	Painted 40mm dia handrails					L30		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Lift Lobby**	**Date of origin:**	Aug-10
Room Number	**A003**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Lift Lobby						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)						
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Concrete						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		20degC	not controlled	not controlled		not controlled	not controlled	none
3.2	**Lighting**	200 lux Lighting to the lift controls and doorways		**Control**		High Frequency Control Gear Manual switching		
3.3	**Acoustic Req'mts Requirements**							
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Cleaners socket						
3.5	**Panic Alarm/ Security**							
3.6	**Other**	Pressurised - dependent on fire strategy						

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Toilets**	**Date of origin:**	Aug-10
Room Number	**A004**	**Level**	Lower Ground Floor (-2)

1.0	**General**		
1.1	**Use**	Toilets	
1.2	**Occupancy**		
1.3	**Dimensions**	Area (m2) 16.3	4.09 x 4.0
1.4	**Planning Relationships**		
1.5	**Fire**		

2.0	**Building Elements**		**Spec Ref**
2.1	**Floors**	Concrete	
2.2	**Walls**	140mm Blockwork Paint Grade	F10
2.3	**Ceilings**	N/A	
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade	L20
2.5	**Degree of Privacy**		
2.6	**Windows**	N/A	
2.7	**Glazed Screen**	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		19degC min.	26max if cooling provided	Not controlled	8 air changes per hour.	10 air changes per hour	PIR control on fans and lighting
3.2	**Lighting**	200 lux IP65 fittings		**Control**	PIR control and switch		
3.3	**Acoustic Req'mts**	NR45					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
3.4	**Power sockets**	Fuse spurs for hand dryers					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Water connections to WC and wash hand basin					

4.0	**Fittings**	**Spec Ref**
	WC Pans	N13
	Basin vanity unit	N13
	Abulent pack	N13

ROOM DATA SHEET

Project	1204	File Ref	
Room Name	**Kitchenette**	Date of origin:	Aug-10
Room Number	**A005**	Level	Lower Ground Floor (-2)

1.0	**General**		
1.1	Use	Kitchen	
1.2	Occupancy		
1.3	Dimensions	Area (m2) 7.6	4 x 1.9
1.4	Planning Relationships		
1.5	Fire		

2.0	**Building Elements**		**Spec Ref**
2.1	Floors	Concrete	
2.2	Walls	140mm Blockwork Paint Grade	F10
2.3	Ceilings	N/A	
2.4	Door/s & Lock Type	N/A	
2.5	Degree of Privacy		
2.6	Windows	N/A	
2.7	Glazed Screen	N/A	

3.0	**Services - Refer to Services Specification**						
3.1	Environment	Winter Temp C	Summer Temp C	Air Humidity	Vent supply	Vent Extract	Control
		16-19degC	not controlled	not controlled	Extract hood over cooking area		Local Controls
3.2	Lighting	500lux		Control	High Frequency Control Gear Manual Switching.		
3.3	Acoustic Req'mts						
3.3	Communications	Telephone Yes	Computer	Fax	TV socket	FM socket	Other
3.4	Power sockets	Hard wired power supplies to electrical appliances Power sockets above work surfaces					
3.5	Panic Alarm/ Security						
3.6	Other	Gas connections to cookers and hobs. Drainage and H&C water connections as required.					

4.0	**Fittings**	**Spec Ref**
	Kitchen base and wall units Sink Fridge	**N11**

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Workshop**	**Date of origin:**	Aug-10
Room Number	**A006**	**Level**	Lower Ground Floor (-2)

1.0	**General**						
1.1	**Use**	Workshop					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 231.2				26.447 x 9.7	
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Concrete					
2.2	**Walls**	140mm Blockwork Paint Grade			F10		
2.3	**Ceilings**	N/A					
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		16-19degC	Not controlled	Not controlled	Make up air as required by processes	Specialist extract as required by processes	Local Controls
3.2	**Lighting**	300 Lux general for most open areas. 300 Lux vertically on machines such as drills, lathes, etc. 500 Lux on workbenches where component assembly or repair is carried out.		**Control**	Manual switching and time clock		
3.3	**Acoustic Req'mts**						
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Yes				
3.4	**Power sockets**	Dedicated 3 phase distribution board					
		Hired wired power supplies to machines. Power sockets as required by layout					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Dust/fume extract systems with pulse jet or other filter installations					
4.0	**Fittings**				**Spec Ref**		
		Independant shelving to Clients requirements					
		Benching to Clients requirements					

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**First Aid**	**Date of origin:**	Aug-10
Room Number	**A010**	**Level**	Lower Ground Floor (-1)

1.0	**General**						
1.1	**Use**	First Aid Room					
1.2	**Occupancy**						
1.3	**Dimensions**	Area (m2) 4.7					
1.4	**Planning Relationships**						
1.5	**Fire**						
2.0	**Building Elements**				**Spec Ref**		
2.1	**Floors**	Floating Screed			M10		
2.2	**Walls**	Plasterboard Partitions			F10		
2.3	**Ceilings**	Lay in mineral tile			K10		
2.4	**Door/s & Lock Type**	Solid Timber Veneered			L20		
2.5	**Degree of Privacy**						
2.6	**Windows**	N/A					
2.7	**Glazed Screen**	N/A					
3.0	**Services - Refer to Services Specification**						
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity	Vent supply	Vent Extract	Control
		22 degC	26deg C max	Not controlled	10l/s person	As supply	Local Controls
3.2	**Lighting**	300 lux general, 500 where medical examination may be needed.		**Control**	Manual switching with time clock		
3.3	**Acoustic Req'mts**	NR 35					
3.3	**Communications**	Telephone	Computer	Fax	TV socket	FM socket	Other
		Yes	Yes	Yes	Yes	Yes	Induction Loop
3.4	**Power sockets**	Yes					
3.5	**Panic Alarm/ Security**						
3.6	**Other**	Sink with H&C water connections and drainage					
4.0	**Fittings**				**Spec Ref**		
	Medical room equipment package				N10		

ROOM DATA SHEET

Project	1204	**File Ref**	
Room Name	**Store**	**Date of origin:**	Aug-10
Room Number	**A007**	**Level**	Lower Ground Floor (-2)

1.0	**General**							
1.1	**Use**	Store						
1.2	**Occupancy**							
1.3	**Dimensions**	Area (m2)	190.3			19.62 x 9.7		
1.4	**Planning Relationships**							
1.5	**Fire**							
2.0	**Building Elements**					**Spec Ref**		
2.1	**Floors**	Concrete						
2.2	**Walls**	140mm Blockwork Paint Grade				F10		
2.3	**Ceilings**	N/A						
2.4	**Door/s & Lock Type**	Solid Timber Paint Grade		Fire Doors		L20		
2.5	**Degree of Privacy**							
2.6	**Windows**	N/A						
2.7	**Glazed Screen**	N/A						
3.0	**Services - Refer to Services Specification**							
3.1	**Environment**	Winter Temp °C	Summer Temp °C	Air Humidity		Vent supply	Vent Extract	Control
		15 degC	not controlled	not controlled		not controlled	not controlled	not controlled
3.2	**Lighting**	200 Lux for simple bulk storage and 300 Lux for storage and selection of small items. 200 Lux vertically for		**Control**		Manual Switching Timer		
3.3	**Acoustic Req'mts Requirements**	None						
3.3	**Communications**	Telephone	Computer	Fax		TV socket	FM socket	Other
3.4	**Power sockets**	Yes						
3.5	**Panic Alarm/ Security**							
3.6	**Other**							
4.0	**Fittings**					**Spec Ref**		
	Shelving to Clients requirements							

Appendix C – Hyder Construction Option Report

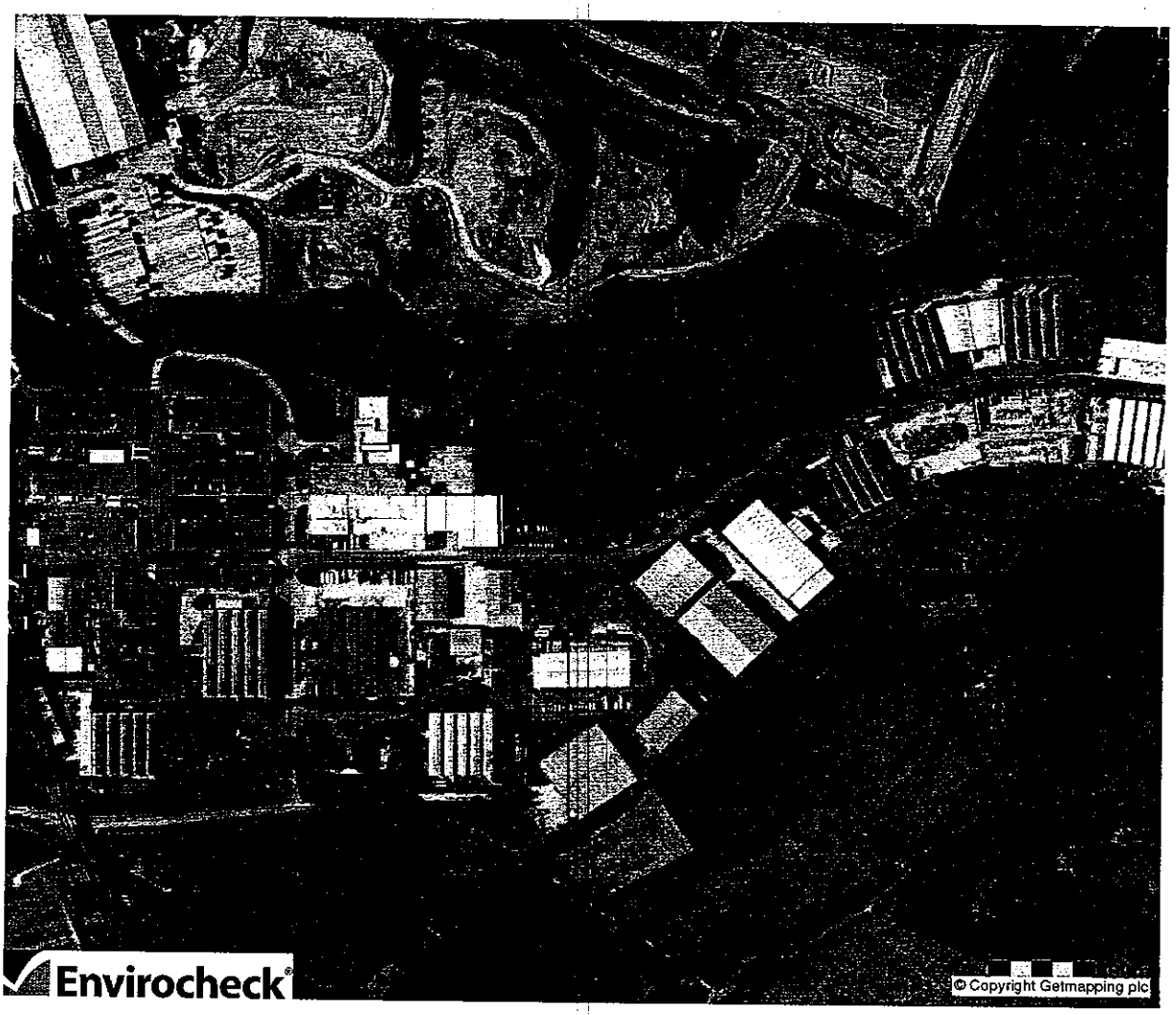
Hyder

mercia waste management

Mercia Waste Management

Mercia EnviRecover Renewable Energy Facility

Construction Options Report



Hyder Consulting (UK) Limited
2212959
HCL House
Fortran Road
St Mellons Business Park
St Mellons
Cardiff CF3 0EY
United Kingdom
Tel: +44 (0)29 2092 6700
Fax: +44 (0)29 2092 5222
www.hyderconsulting.com

Mercia Waste Management

Mercia EnviRecover Renewable Energy Facility

Construction Options Report

Author [redacted]

Checker [redacted]

Approver [redacted]

Report No 5006-LN01323-NER-01

Date July 2010

This report has been prepared for the Mercia Waste Management in accordance with the terms and conditions of appointment for the Mercia EnviRecover Renewable Energy Facility contract dated 14th January 2010. Hyder Consulting (UK) Limited (2212959) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

CONTENTS

Appendices

Executive Summary

Introduction:

1. Hyder Consulting (UK) Limited (HCL) has been instructed by Mercia Waste Management (Mercia) to provide a Construction Options report to address issues associated with the construction of the proposed 15.5MW renewable energy facility, located at the Hartlebury Trading Estate in Worcestershire.
2. The Construction Options report presents:
   a) Details relating to the proposed renewable energy plant construction covering aspects relating to the buildability of the plant, the associated temporary works, the structures within the deep excavation and outside of the deep excavation, works sequencing and the anticipated construction programme.
   b) Design of additional ground investigation works to provide supplementary information for the detailed design.
3. This report should be read in conjunction with the Desk Study Report (Ref. 1), the Geotechnical Interpretative Report (Outline Design) (Ref.2), the Factual Ground Investigation Report (Ref.3) and the Contaminated Land report (Ref.4), all of which were produced by HCL.

Energy Plant Buildability:

4. The bulk earthworks operation on the site would be the excavation associated with the RLDP. The excavation would house the Main Building with ramped accesses on the western and eastern perimeters. In order to prevent groundwater entering the excavated area and to provide stability to the excavation, a retaining wall solution e.g. sheet piles, secant piles or diaphragm wall, would be developed around the perimeter of the excavated area.

5. The retaining wall would be constructed to a depth of approximately 10m below ground level. The construction of the retaining wall is likely to take up to 8 to 10 weeks with the excavation works commencing during the retaining wall construction. The entire process of piling and excavation is likely to last approximately 14 to 16 weeks, depending on the appointed contractors programme and earthworks plant used.

6. The site is overlain by a shallow depth of made ground (generally 1 to 2.5m but with occasional localised areas to a greater depth), the material beneath the made ground comprises Clays to a depth of approximately 8m below ground level with Mercia Mudstone encountered between 8 and 10m below ground level. The dimension of the main excavation would be approximately 130m by 70m in plan and 8m deep. The excavation would therefore result in approximately 72,000m^3 of material. The made ground element of the excavated material 9 approx 12,000 m^3) would need to be treated/screened on site, suitable material would be put aside for re-use in the works with any excess or unsuitable material being exported off site.

7. Approximately 60,000m^3 of Clays would be excavated and we understand moved off site for reuse. The movement of material would ideally originally be within the site boundary although there may be a need to transport the material via lorries on the roads to a place of storage for potential brick making / reuse. This process of assessment, stockpiling and storage on and off site is a critical part of the earthworks operation. As such, it is considered that a geotechnical engineer will be required full time onsite during this process to make the assessments and by working with the contractor's earthworks team ensure maximum utilisation of plant and available land area is achieved.

Energy Plant Buildability (Continued):

8. The preliminary site investigation did not identify significant flows of shallow groundwater, therefore it is considered unlikely that there would be a need to pump large quantities of water from the excavation. However, if pumping is required then the water would be discharged into settlement lagoons prior to onward controlled discharge into the watercourse which flows through the site.

9. The settlement lagoons would be designed in line with best practice guidelines outlined in CIRIA C532 Control of water pollution from construction sites. Discharge consents would need to be obtained from the Environment Agency in advance of the works. Other key earthworks on the site would include excavations associated with utility and drainage runs, watercourse diversion, detention basins, strip foundations for the ancillary buildings and ground preparation for external hardstanding areas.

10. It is currently considered that basal pressure relief wells should be installed into the base of the proposed excavation with valves installed to control groundwater influences both during the site life and post operations. More detailed information is required to discuss further due to the small site and complexity of the development. The temporary and sequencing works are to be discussed further with the appointed Principal Contractor for the scheme.

11. The earthworks are expected to take in the order of four months to excavate, separate, treat, stockpile and finally remove, the material to initially be separated into made ground and natural ground. The made ground should be further separated, treated and stockpiled into re-usable material and unsuitable material for disposal with the piling operations running concurrently. The sequencing of works, the use of available space and overall programme will be dependent upon the plant and construction staff availability which are to be discussed further with the appointed Principal Contractor for the scheme.

Engineering Considerations (structures outside the deep excavation):

12. Shallow (strip / pad) foundations will be suitable for most structures, with foundations taken down to at least 300mm below any Made Ground soils into the underlying natural soils. Recommended safe net bearing pressures for preliminary design are provided within the report for foundations placed at 1m, 2m and 3m depth in either superficial soils or weathered Mercia Mudstone to limit post-construction total and differential settlements to 25mm and 15mm respectively.

13. The underlying soils are clays with a high to medium volume change potential. Consequently, a minimum foundation depth of 0.90m should be adopted to prevent potential problems associated with the seasonal shrinkage and swelling of the clay soils. Across much of the site, however, the thickness of made ground will result in shallow foundations being at greater depth than this minimum requirement. In the vicinity of existing, proposed or recently removed trees, the foundation depth will need to be increased in accordance with the guidelines given in NHBC Chapter 4.2 'Building Near Trees'. Related to this recommendation, it is understood that several high water demand species trees used to be present in the centre of the site, which may necessitate the use of a pile or a raft foundation solution for units in their immediate vicinity. Further detailed review of moisture content and tree root depth will be required of the soils as part of the construction phase investigation.

Engineering Considerations (structures outside the deep excavation): cont.

14. Formation soils should be carefully inspected by a suitable qualified / experienced person to identify the nature of the formation stratum (e.g. whether made ground, superficial soils or weathered Mercia Mudstone) and/or the presence of any soft/loose zones. Any such zones should be over-excavated and replaced with a well-compacted well-graded granular fill or lean mix concrete.

15. The superficial soils and weathered Mercia Mudstone strata are likely to be very susceptible to softening in the presence of excess water. Consequently, it is crucial to ensure that proposed formations are not exposed to significant and/or prolonged rainfall. For structures imposing higher loads and/or with more stringent settlement tolerances, piled foundations are recommended. Bored, augered or driven piles would be suitable in these soils, though pile type selection should take cognisance of the presence of buried large obstructions in the made ground soils. Consideration also should be given to the requirement to dispose of arisings comprising (in part) made ground soils if non-displacement piles are adopted.

16. Suspended floor construction is likely to be appropriate for most structures, because of the presence of made ground and/or medium shrinkage potential cohesive soils. For structures not in close proximity to existing, proposed or recently removed trees and where the made ground is of limited thickness, it may be economic to excavate out the made ground and re-compact it to a suitable engineering earthworks specification and then utilise a ground bearing floor.

17. For larger structures, where suspended floors are uneconomic, an excavation and re-compaction solution is likely to be the most favourable and cost-effective though consideration could be given to combining a suitable method of ground treatment (e.g. vibro-stone or vibro-concrete columns) with a ground bearing slab.

18. In the ground investigations, groundwater was generally encountered as seepages from within the made ground or just below its interface with the natural soils. Some of these instances may be perched waters within the made ground soils, though some may be in hydraulic continuity with the stream flowing through the site.

19. Groundwater monitoring indicates seepages are likely in excavations below 1.0-2.5m and appropriate provisions for groundwater control should be anticipated in this respect. With the exception of localised large pieces of rubble within the made ground soils, excavation for the construction of shallow foundations etc. should be possible using conventional hydraulic excavators.

Engineering Considerations (deep excavation area):

20. The base of the excavation is approximately at the interface between weathering Grade IIII and Grade II material, and bearing capacity may be limited more by the drained shear strength and settlement characteristics of the underlying soils than undrained shear strength. A safe net bearing pressure of 500kN/m2 is recommended for preliminary design based on published literature, though this will need to be confirmed depending on groundwater control measures incorporated into the permanent works design.

21. Although pronounced variability in the formation soils is less likely at this depth, they should be carefully inspected by a suitable qualified / experienced person to identify the presence of any weaker zones (particularly in areas of anticipated high structural loads). Any such zones should be over-excavated and replaced with lean mix concrete.

Continued ./...

Engineering Considerations (deep excavation area): cont.

22. The low plasticity soils are likely to be very susceptible to softening in the presence of free or standing excess water and it is crucial to that excavations for structural foundations are covered without delay (e.g. with blinding concrete) to prevent softening by any water that may enter the excavation.

23. Excavation for the deep basement should be relatively straight-forward using conventional hydraulic plant, though towards the base of the excavation plant capable of 'hard digging' may be required, and localised use of plant capable of 'easy ripping' may be required in the more competent bands of harder mudstone and sandstone.

    Detailed discussion is provided in the report for various options of excavation support and groundwater control for the deep excavation area in the temporary works and permanent works condition. For the purposes of design, the water table classification (BS 8102 : 2009) should be regarded as 'high', and it is anticipated that a Grade 2 environment performance level is appropriate.

24. The presence of a high groundwater table and potential localised artesian water pressures just below the proposed excavation formation level, are critical issues to the design of any temporary works, the permanent basement walls and groundwater control measures. Although a number of potential options are feasible, the ultimate decision will involve a detailed assessment of practical buildability relative to the cost for all the methods, the following recommendations are provided:

    - A solution involving some form of cut-off wall is favoured over open excavation, not only to control lateral groundwater inflow but also to limit the extent of any peripheral groundwater drawdown. This form of solution can be combined to form Type 'B' 'structurally integral protection' to the permanent works basement, but is likely to make construction using a monolithic R.C. box less cost-effective.
    - The stiffness of the soils at depth is likely to preclude the use of sheet piles, and a secant pile or diaphragm wall is considered more suitable, especially when considering both temporary and permanent solutions. It is likely that these walls will need to be propped with struts or anchors (though in the early temporary works case the use of soil berms could be considered), which would have the benefit of reducing the internal steel reinforcement and/or the toe embedment depth required.
    - The installation of pressure relief wells is considered to represent the simplest and most cost-effective way of controlling the risk of heave at the base of the excavation due to hydraulic uplift. These could be incorporated into the permanent works design of the basal slab to control hydraulic uplift and form part of the Type 'C' drainage protection measures.
    - The design of the basal slab needs to take cognisance of the potentially very high long-term hydraulic pressures to prevent the risk of catastrophic heave which might then lead to failure of the surrounding retaining walls. Based on preliminary data available to date, in the absence of any groundwater control measures these pressures could be of the order of 90kN/m^2 at the proposed formation level. The size and geometry of the proposed basement structure, means it is very unlikely that these forces can be accommodated by shear resistance on the side walls, and it is recommended that outline design comprises a combination solution of basal pressure relief wells, thickened basal slab and (if required) supplementary ground anchorages and/or tension piles.

Engineering Considerations (deep excavation area): cont.

Groundwater regime aspects will have very significant implications on the cost of the design and construction of the deep basement. Consequently, as part of the ground investigation to provide data for detailed design, it is imperative that sufficient instrumentation and monitoring of the groundwater regime is undertaken to provide data for economic and safe construction. It is anticipated that this will include some form of pumping test with the installation of vibrating wire piezometers at discrete levels around the proposed structure, linked to datalogger systems to enable any fluctuations in groundwater levels and artesian water pressures to be ascertained and long term monitoring through the construction phase.

Re-use of Excavated Materials:

25. The majority of the soils likely to be excavated on the site are likely to be suitable for re-use as either landscape fill or general earthworks materials, it is important that the various stratum groups are appropriately segregated (particularly the made ground) to prevent the risk of cross contamination.

    Preliminary test results indicate that the Superficial soils and Mercia Mudstone materials will be suitable for re-use as SHW Class 1 or Class 2 general fill (Class 1A, 2A/2B/2C depending on stone content and/or moisture content). The majority of these materials will fall into Class 2B dry cohesive, and very stiff/hard clay material excavated from deeper levels may need to be improved by the addition of water (via spray irrigation) to soften them sufficiently to facilitate adequate re-compaction.

26. Natural clay material from shallow depth may be too soft (wet) in its 'as-excavated' condition to be suitable for re-compaction as engineered fill, but (subject to further testing) it is likely these soils may be improved by the addition of lime (or cement) to render them suitable for re-use as engineered earthworks materials.
27. The Mercia Mudstone stratum soils are likely to be very susceptible to softening in the presence of free or standing excess water and it is crucial that any excavations are kept free of ponding water (if at all possible) and that excavation for material proposed for re-use as engineered materials is not undertaken during periods of prolonged and/or heavy rainfall.
28. A proportion of the material likely to be excavated from the basement area will comprise made ground soils. Preliminary laboratory tests undertaken in the GIP investigation indicates that the cohesive made ground soils would be suitable for re-use as general cohesive fill (though soft material may need to be improved) and granular made ground is likely to be suitable for re-use as Class 1 fill. All of the made ground soils will need to be carefully screened to remove unsuitable inclusions (e.g. timber, concrete blocks, textile, metal, etc).
29. Chemical testing indicates that the vast majority of the made ground soils are likely to be suitable for re-use, with the exception of one sample that provided unacceptably high levels of lead content. Consequently, as part of the detailed design ground investigation, additional testing of samples should be undertaken in this area to delimit the extent of this contamination. None of the soils likely to be won from site are likely to be suitable for re-use as selected (Class 6) fill material.
30. It is understood that enquiries have been made by Mercia Waste Management to companies to make use of the excavated natural clay materials for specialist re-use as brick manufacture and/or landfill site capping or as a general construction material. Should this become the agreed end use, this material will need selecting, stockpiling and transporting off site as part of the works.

Other Considerations:

Buried Concrete Classification: Buried concrete should be designed to Sulphate Design Class DS-1, ACEC Class AC-1s, as defined within the BRE guidelines.

Road Pavement Design Considerations: A preliminary subgrade CBR value of 2.5% is recommended for outline design. Because the subgrade soils will be very variable, the incorporation of appropriate geogrid reinforcement at the base of the pavement foundation is recommended to ameliorate any variations and enable the thickness of capping / sub-base to be reduced. Some of the likely subgrade soils are likely to be very susceptible to softening in the presence of excess water, so formations should not be exposed to significant and/or prolonged rainfall.

Soakaway Drainage: In-situ percolation tests indicate that soakways will not represent a suitable form of surface water disposal on this site.

31. **Former Well:** A possible well is detailed within the north eastern part of the site, in the previous ground investigation report, that is believed to be an open well full of water and brick rubble. It is not believed to have been stabilised and this will require further consideration prior to development. In particular, if the well is relatively deep, treatment involving grouting and capping may be necessary. Also, depending on the depth of the well and the backfill material, it may form a receptor for groundwater and should therefore be considered further in respect of groundwater contamination once additional information is obtained.

32. **Construction Phase Ground Investigation:**

An additional ground investigation is required to confirm the detailed design for the temporary and permanent works for the development.

These currently comprise a combination of ;-

- Deep excavations
- Slope stability of the excavation
- Basal pressure relief wells.
- Thickened basal slab.
- Temporary and permanent water proofing of the structures
- Supplementary ground anchorages and/or tension piles.
- Shallow foundations for light structures
- Associated infrastructure
- Long term drainage

Clearly, to enable cost-effective and safe detailed design of these elements it is crucial that further appropriate ground investigation is undertaken to gain more detailed understanding of the groundwater regime beneath this site, specifically to determine the permeability of the materials to be excavated and to record the water levels both within and outside of the proposed excavation areas

As part of the ground investigation to provide data for detailed design, it is imperative that sufficient instrumentation and monitoring of the groundwater regime together with a pumping trial is undertaken to provide data for economic and safe construction.

Construction Phase Ground Investigation: cont.

In terms of the assessment of made ground and potential contamination plus obstructions within this strata, an extensive grid of trial pits will require excavating and suitable testing undertaken. Part of the investigation boreholes will be to focus on the strength of materials between 8 to 12mbgl to provide additional design information for pile and anchor design as well as being used for groundwater instrumentation.

It is anticipated that this will include the installation of vibrating wire piezometers at discrete levels around the proposed deep excavation structure, linked to datalogger systems to enable any fluctuations in groundwater levels and artesian water pressures to be ascertained, These will also be an utilised to assess a series of step tests and full pumping tests at, at least one, possibly two locations.

Ongoing gas and ground water monitoring would be required before, during and after construction; where possible wells should be located well away from the proposed construction area to prevent damage during the construction works to provide long term monitoring.

To achieve the detailed assessment of the made ground strata and its potential contamination and obstruction issues an extensive grid of trial pits will be required together with suitable contamination testing undertaken.

With regards the main excavation additional boreholes will be required, particularly to focus on the strength of the strata between 8 and 12 metres depth below ground level to provide additional detailed design information for pile and/or anchor selection and design of temporary and permanent works including groundwater control.

Hence the detailed construction phase investigation will consist of;-

Trial pits with contamination testing

Boreholes down between 15 to 20 metres with insitu testing and monitoring instrumentation for both ground water and gas.

Static cone Penetrometer testing with dissipation testing.

Drilling installation of between one to two pump wells.

Pumping tests.

At this time, prior to confirmation of planning and any conditions that might be applied which could affect the overall design of these ground investigation works we have not provided a detailed B of Q as this may be subject to change.

1 INTRODUCTION

Hyder Consulting (UK) Limited (HCL) has been instructed by Mercia Waste Management (Mercia) to provide a Construction Options report to address issues associated with the construction of the proposed 15.5MW renewable energy facility, located at the Hartlebury Trading Estate in Worcestershire.

The Construction Options report presents details relating to the proposed renewable energy plant construction covering aspects relating to the buildability of the plant, the associated temporary works, the structures within the deep excavation and outside of the deep excavation, works sequencing and anticipated construction programme. The report also summarises the outline design for the additional ground investigation works to provide supplementary information for the detailed design.

This report should be read in conjunction with the Desk Study Report (Ref. 1), the Geotechnical Interpretative Report (Outline Design) (Ref.2), the Factual Ground Investigation Report (Ref.3) and the Contaminated Land report (Ref.4), all of which were produced by HCL.

1.1 Background to the Proposed Development

The Joint Municipal Waste Management Strategy (JMWMS) for Herefordshire and Worcestershire, 2004-2034, has highlighted the need for dealing more effectively with the waste left over after recycling (referred to as 'residual waste').

In a review of the JMWMS undertaken by the Joint Members Waste Forum, a number of scenarios for managing residual waste were examined using a computer model called WRATE. Following this assessment, the option of a single site Energy-from-Waste plant with combined heat and power (CHP) capabilities was identified as the optimum solution, resulting in the Mercia EnviRecover 15.5MW renewable energy facility.

1.2 Objectives of the Report

The principal objectives of the report are to identify the main construction issues of the proposed renewable energy site. The report aims to:

- provide an assessment of the plant buildability;
- Discuss the temporary works condition, overall construction programme and works sequencing; and
- Comment on the structures both outside and within the deep excavation.

2 ENERGY PLANT BUILDABILITY

2.1 Temporary Works & Sequencing

The temporary works and sequencing of the plant construction will be determined by the appointed Principal Contractor; however these works are expected to be as follows:

The bulk earthworks operation on the site would be the excavation associated with the RLDP. The excavation would house the Main Building with ramped accesses on the western and eastern perimeters. In order to prevent groundwater entering the excavated area and to provide stability to the excavation, a retaining wall solution e.g. sheet piles, secant piles or diaphragm wall, would be developed around the perimeter of the excavated area.

The retaining wall would be constructed to a depth of approximately 10m below ground level. The construction of the retaining wall is likely to take up to 8 to 10 weeks with the excavation works commencing during the retaining wall construction. The entire process of piling and excavation is likely to last approximately 14 to 16 weeks, depending on the appointed contractors programme and earthworks plant used.

The site is overlain by a shallow depth of made ground (generally 1 to 2.5m but with occasional localised areas to a greater depth), the material beneath the made ground comprises Mercia Clays to a depth of approximately 8m below ground level with Mercia Mudstone encountered between 8 and 10m below ground level. The dimension of the excavation would be approximately 130m by 70m in plan and 8m deep. The excavation would therefore result in approximately 72,000m^3 of material. The made ground element of the excavated material (approx 12,000m^3) would need to be treated/screened on site, suitable material would be put aside for re-use in the works with any excess or unsuitable material being exported off site.

Approximately 60,000m^3 of Clays would be excavated and we understand moved off site for reuse. The movement of material would ideally originally be within the site boundary although there may be a need to transport the material via lorries on the roads to a place of storage for potential brick making / reuse. This process of assessment, stockpiling and storage on and off site is a critical part of the earthworks operation. As such, it is considered that a geotechnical engineer will be required full time onsite during this process to make the assessments and by working with the contractor's earthworks team ensure maximum utilisation of plant and available land area is achieved.

The preliminary site investigation did not identify significant flows of shallow groundwater, therefore it is considered unlikely that there would be a need to pump large quantities of water from the excavation. However, if pumping is required then the water would be discharged into settlement lagoons prior to onward controlled discharge into the watercourse which flows through the site. The settlement lagoons would be designed in line with best practice guidelines outlined in CIRIA C532 Control of water pollution from construction sites. Discharge consents would need to be obtained from the Environment Agency in advance of the works.

Other key earthworks on the site would include excavations associated with utility and drainage runs, watercourse diversion, detention basins, strip foundations for the ancillary buildings and ground preparation for external hardstanding areas.

It is currently considered that basal pressure relief wells should be installed into the base of the proposed excavation with valves installed to control groundwater influences both during the site life and post operations. More detailed information is required to discuss further due to the small site and complexity of the development. The temporary and sequencing works are to be discussed further with the appointed Principal Contractor for the scheme.

Provision for plant closure in the form of plant removal / disposal and ultimately the infilling of the deep excavation area with material to re-instate the ground back to the site's original condition needs to be considered and accounted for.

2.2 Overall Programme

The earthworks are expected to take in the order of four months to excavate, separate, treat, stockpile and finally remove, the material to initially be separated into made ground and natural ground. The made ground should be further separated, treated and stockpiled into re-usable material and unsuitable material for disposal with the piling operations running concurrently. The sequencing of works, the use of available space and overall programme will be dependent upon the plant and construction staff availability which are to be discussed further with the appointed Principal Contractor for the scheme.

3 ENGINEERING CONSIDERATIONS (Structures Outside the Deep Excavation)

3.1 Shallow Foundation Design

The made ground soils across the site are highly variable in both content and engineering characteristics. The data available suggests that they have not been placed to any engineering specification, and therefore in their present condition their bearing capacity and settlement characteristics cannot be relied on. Consequently, they are not considered suitable as a reliable formation material for shallow foundations, and it is recommended all foundations are taken down to at least 300mm into the underlying natural soils.

Based on shallow strip or pad foundations with a formation in the superficial deposits, it is recommended that the following safe net bearing capacities are used for preliminary design:

Table 3.1: Recommended Preliminary Safe Net Bearing Pressures for Shallow Foundations (Superficial Soils)

Foundation Depth (m bgl)	Preliminary Safe Net Bearing Pressure (kN/m^2)			
	1.0m strip	2m x 2m Pad	2m x 2m Pad	3m x 3m Pad
1.0	100	125	115	110
2.0	125	150	145	140
3.0	160	190	185	185

For shallow strip or pad foundations with a formation in the weathered Mercia Mudstone stratum, where the increase in undrained shear strength with depth is greater and more reliable, the following preliminary safe net bearing capacities are appropriate:

Table 3.2: Recommended Preliminary Safe Net Bearing Pressures for Shallow Foundations (Weathered Mercia Mudstone)

Foundation Depth (m bgl)	Presumed Safe Net Bearing Pressure (kN/m^2)			
	1.0m strip	2m x 2m Pad	2m x 2m Pad	3m x 3m Pad
1.0	100	125	115	110
2.0	160	190	185	175
3.0	215	255	245	245

The bearing pressures provided above assume that the acceptable post-construction total and differential settlement does not exceed 25mm and 15mm respectively.

Because the underlying soils are indicated to be high to medium plasticity clays with a high to medium volume change potential, a minimum foundation depth of 0.90m should be adopted to prevent potential problems associated with the seasonal shrinkage and swelling of the clay soils based on NHBC guidelines (including climate zone correction). Across much of the site, however, the thickness of made ground will result in shallow foundations being at greater depth than this minimum requirement.

In the vicinity of existing, proposed or recently removed trees, the minimum foundation depth will need to be increased in accordance with the guidelines given in NHBC Chapter 4.2 'Building Near Trees'. This depth will be a function of the tree species and height and/or mature height depending on whether it has been recently (or is to be) removed or proposed planting.

Related to this recommendation, from the previous GIP report, it is understood that several trees used to be present in the centre of the site, which included high water demand species such as oak and willow. Although these trees were removed some years ago, without further detailed investigation in these areas it is not possible to be certain that the soil moisture content profiles have equalised and that further volume change is no longer a potential problem. Consequently, until further data is available deeper foundations will be needed in these areas in accordance with the NHBC guidelines. In very close proximity to such former trees, this may necessitate the use of a pile or a raft foundation solution, depending on the nature of the structure, the anticipated structural loads and the presence (or absence) of made ground.

As a result of the variable ground conditions, the formation soils should be carefully inspected by a suitable qualified / experienced person to identify the nature of the formation stratum (e.g. whether made ground, superficial soils or weathered Mercia Mudstone) and/or the presence of any soft/loose zones. Any such zones should be over-excavated and replaced with a well-compacted well-graded granular fill or lean mix concrete.

The superficial soils and weathered Mercia Mudstone strata are likely to be very susceptible to softening in the presence of excess water. Consequently, it is crucial to ensure that proposed formations are not exposed to significant and/or prolonged rainfall.

3.2 Piled Foundation Design

For structures imposing loads and/or with settlement tolerances that cannot be accommodated by the shallow foundation recommendations made in section 3.1 above, piled foundations represent the most practicable foundation solution.

Bored, augered or driven piles would be suitable in these soils, though reference should be made to a reputable specialist piling contractor for advice on the most suitable and cost-effective pile solution in these soils, which should include the potential presence of buried large obstructions in the made ground soils.

In deciding the type of pile, consideration should be given to the requirement to dispose of arisings comprising (in part) made ground soils if non-displacement piles (bored/augered) are adopted.

Once the requirement for any structures to have piled foundations has been ascertained, because the engineering characteristics of the Mercia Mudstone stratum can be extremely variable both with depth and laterally, further ground investigation should be undertaken in the location of the specific structure upon the site. This will enable the detailed design of the pile foundation(s) to be optimised.

3.3 Floor Design

Floor design for units (other than the deep excavation area) will be dictated by:

1 The presence of near-surface non-engineered made ground soils, which could result in excessive settlement of ground bearing floors.

2 The presence of high-medium shrinkage clay soils, which could result in potential heave of ground bearing floors.

Consequently, the following recommendations are made at this outline design stage.

a. For structures underlain by made ground, a suspended floor is recommended.

b. For structures not underlain by made ground but located within the zone of influence of existing, proposed or recently removed trees based on NHBC Chapter 4.2, a suspended floor is recommended.

a For structures not underlain by made ground and not located in close proximity to existing, proposed or recently removed trees a ground bearing floor is suitable.

Given the extensive cover of made ground across the site, it is considered that most structures will fall into category (a) above. However, in areas of the site not located in close proximity to existing, proposed or recently removed trees and where the made ground is of limited thickness, it may be economic to excavate out the made ground and re-compacted it to a suitable engineering earthworks specification and then utilise a ground bearing floor.

For larger structures that fall into category (a) or (b) above, where suspended floors are uneconomic, an excavation and re-compaction solution is likely to be the most favourable and cost-effective (depending on how much of the made ground needs improvement treatment to make it suitable for re-compaction). Alternatively, combining a suitable method of ground treatment of the made ground soils (such as vibro-stone or vibro-concrete columns (VSCs/VSCs)) with a ground bearing slab may represent the more economic and lower risk solution.

3.4 Groundwater Considerations

In the ground investigations, groundwater was generally encountered as seepages from within the made ground or just below its interface with the natural soils. Some of these instances may be perched waters within the made ground soils, though some may be in hydraulic continuity with the stream flowing through the site.

Monitoring of the groundwater installations indicates water levels in the range1.0-2.5m below existing ground level (m begl).

On this basis, appropriate provisions for groundwater control should be anticipated in this respect.

3.5 Excavatability

With the exception of localised large pieces of rubble within the made ground soils, excavation of the trial pits using conventional hydraulic excavators was achieved without any difficulty. Therefore, excavation for the construction of shallow foundations etc. should not require specialist ripping plant, though progress below 3.0m will reduce once the stiff/very stiff soils.

4 ENGINEERING CONSIDERATIONS (Deep Excavation Area)

4.1 Foundation Design

For the proposed deep excavation associated with the Energy-from-Waste Plant at a depth of approximately 8m below existing ground level (≈39.8mOD), the investigation data indicates the formation to be in Mercia Mudstone material with an SPT 'N' value ≈80 for which an estimated equivalent undrained shear strength of 500kN/m^2. Based on table 3.3 of CIRIA C570 (Ref.5) this places the base of the excavation approximately at the interface between weathering Grade IIII and Grade II material. As a result, bearing capacity may be limited more by the drained shear strength and settlement characteristics of the underlying soils than undrained shear strength. On this basis, until more detailed data is available on the strain characteristics of the soils at very high stress levels, it is recommended that a safe net bearing pressure of 500kN/m^2 is used for preliminary design as indicated by table 8.2 of CIRIA C570 and table 2.3(b) of Tomlinson (Ref. 7).

Although pronounced variability in the formation soils is less likely at this depth, they should be carefully inspected by a suitable qualified / experienced person to identify the presence of any weaker zones (particularly in areas of anticipated high structural loads). Any such zones should be over-excavated and replaced with lean mix concrete.

The low plasticity of the less weathered Mercia Mudstone stratum soils means they are likely to be very susceptible to softening in the presence of free or standing excess water (even the weak mudstone variants). Consequently, it is crucial to ensure that any excavations for structural foundations are covered without delay (e.g. with blinding concrete) to prevent softening by any water that may enter the excavation.

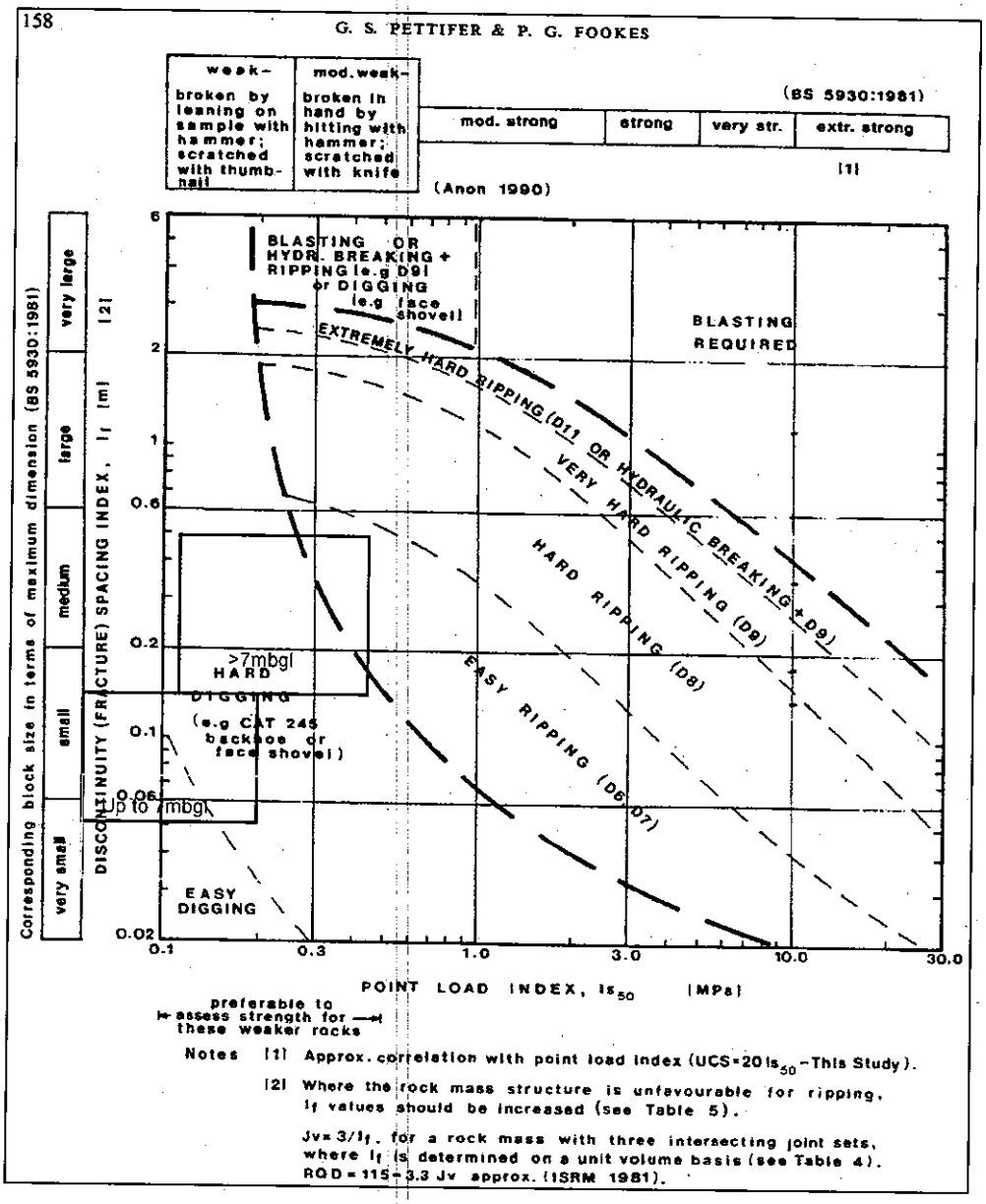
4.2 Excavatability

The proposed floor level of the EnviRecover incinerator will be constructed at a formation level of approximately 8m begl (≈39.8mOD), and is likely to require excavation to depths in excess of 9m begl for construction of the slab structure etc.

From the ground investigation it has been identified that the excavation will be predominantly into material ranging from (typically) firm clay (undrained shear strength of 50kN/m2) to very weak/weak mudstone at 9.0m depth (undrained shear strength varying widely between ≈400kN/m2 - ≈1600kN/m2).

In general, excavation through these materials should be relatively straight-forward using conventional hydraulic plant (see Figure 4.1 based on the work by Pettifer and Fookes, Ref. 8). However, towards the base of the excavation, plant capable of 'hard digging' may be required, and localised use of plant capable of 'easy ripping' may be required in the more competent bands of harder mudstone and sandstone.

Figure 4.1: Estimate of Material Excavatability (based on Pettifer and Fookes)



4.3 Excavation Support and Groundwater Control Considerations

4.3.1 General Design Considerations

The cost-effective design of the deep excavation area will require the structural design, overall weatherproofing design, waterproofing design and construction processes to be considered together, because of the close interaction of these crucial design elements. Similarly, strategies for controlling groundwater, soil gases and contaminants need to be considered as early as possible in the planning and design process to ensure project success.

Protection against water ingress from the following sources need to be considered in the basement design:

a. inflow of surface water (e.g. rainfall, surface water runoff, burst adjacent water main);

b. water pressures acting on the external retaining wall system (lateral groundwater pressures);

c. water pressures below the base slab (hydrostatic uplift pressures).

For each of these cases, the water-resisting design needs to provide sufficient protection against a pre-determined head and/or volume of water.

4.3.2 Waterproofing Protection

Waterproofing protection of a basement construction typically utilises one or a combination of the following types of protection measure:

a. Type A (barrier) protection;

b. Type B (structurally integral) protection;

c. Type C (drained) protection.

The decision on the best type of protection (or combination of protections) needs to consider the following:

1. The category of basement involved;
2. The water table classification and required performance level required;
3. Any need for combined protection;
4. The need (or otherwise) for continuity in the protection;
5. Practicality of construction;
6. Cost.
7. Risks to construction programme.

Basement Category

Given that the excavation will comprise an excavation approximately 8-9m deep and be subject to hydrostatic pressures, it should be categorised as 'deep' based on CIRIA Report 140 (Ref.13).

Water Table Classification

Based on Table 1 of BS 8102 : 2009 (Ref.11), the water table classification is 'high' because the water table (or perched water table) is assessed to be permanently above the underside of the base slab.

On this basis a Type 'A', 'B' or 'C' waterproofing protection system is acceptable provided:

a. A Type 'A' (barrier) protection system (only) utilises an appropriate cementitious multi-coated render (or cementitious coatings) are used and the wall is of concrete to BS EN 1992.

b. A Type 'B' (structurally integral) protection system (only) utilises either a reinforced concrete wall to BS EN 1992, or a piled wall that:

   (i) is directly accessible for repair and maintenance from inside the structure; or

   (ii) is combined with a fully-bonded waterproofing barrier (i.e. Type 'A' protection); of

   (iii) is faced internally with a concrete wall to BS EN 1992.

Performance level Required

Based on Table 2 of BS 8102 : 2009, it is anticipated that the proposed structure for this development falls into 'Grade 2' that requires a performance level whereby no water penetration is acceptable but damp areas are tolerable and ventilation might be required.

This basement grade approximates to the former Grade 2 'better utility' protection of BS 8102 : 1990, with typical usage as a workshop, plant room or storage area.

Type 'A': Tanking Protection

Type 'A' protection is designed to provide a continuous barrier system which excludes water and/or water vapour and may exclude gases. Its reliability is reliant on the formation or adequate joints (where sheet systems are used), the prevention of damage during construction and achieving a satisfactory bond to the substrate.

Generally, the main structure to be 'tanked' needs to be monolithic with a minimum of movement (especially transverse) at joints. Consequently, for large deep basements with a permanent hydrostatic head (such as this development), tanking is only practicable if combined with a reinforced box construction (except where walls are cast onto sheet piling), which limits the options with respect to temporary works excavation stability with potential consequences to construction cost and/or programme. As result, such basements would normally be designed to resist water penetration (Type 'B' protection).

Type 'B': Structurally Integral Protection

Type 'B' protection relies on the ability of the structure, by itself, to minimise water penetration. As a result, where practicable these basements are usually constructed as a reinforced concrete box designed to resist hydrostatic pressure (and other loadings).

Because the level of protection with this option relies on the design and construction of high-quality concrete (with cracking controlled to prevent the penetration of moisture to an acceptable degree), the degree of water (and vapour) resistance achievable generally increases with construction costs. In practice, complete (or a high-level of) environment control cannot be guaranteed using Type 'B' protection alone using any retaining construction method.

In general, retaining solutions with a large number of joint interfaces (e.g. piled walls) are more likely to result in water penetration, and in such circumstances it may be more practical to accept some water penetration and design a system of combined protection incorporating a Type 'A' (barrier) protection (e.g. internal RC lining wall) and/or Type 'C' precautions..

Options for various retaining solutions are discussed further in section 4.3.3 below.

Type 'C': Drained Cavity Protection

Type 'C' protection involves the incorporation of drained cavities to the structural walls and/or floor to collect any moisture that penetrates and discharge it to a sump. Consequently, the inner wall to drained cavities is generally non-load bearing and may need to be designed to be free-standing. The cavity should not be used to conceal large leaks.

Cavities under floors can be formed using no-fines concrete (if the seepage inflow is relatively slight) or proprietary systems (e.g. profiled drainage sheets).

Based on CIRIA Report 139 (Ref. 12), the principal advantages of drained protection are:

- Less dependent on primary construction processes, which may be more difficult to control, and hence this protection system may be more reliable in achieving the required environment.
- Installation may be undertaken in more favourable conditions outside the construction programme critical path.
- Water ingress through the primary structure may be checked and remedied before final installation of the inner wall.
- The principal disadvantages are:
- Reduction in useable floor area.
- Pumps will need to be installed to remove accumulated water.
- If the outer skin is of masonry or plain concrete, under a high hydrostatic pressure (which may be the case with this development), water may penetrate in excessive quantities which may not be efficiently drained.
- Access to the external wall for repair is prevented after the inner wall has been built.
- Long-term costs operation and maintenance costs (e.g. pumps, cleaning of cavities).

4.3.3 Basement Perimeter Wall Construction Options

There are a number of options available to form the basement perimeter walls to form Type 'B; protection and range from temporary support methods, which allow 'traditional' construction techniques to be adopted (e.g. monolithic R.C. box structure), to wall types that can be used for temporary and/or permanent works. Methods of basement construction that can be incorporated into the permanent works, using reinforced concrete, include:

- Steel sheet pile wall
- Contiguous bore pile wall.
- Secant pile wall
- Hard/soft pile wall
- Diaphragm wall.

The considerations for each of these methods is summarised as table 3.4 of CIRIA Report 139 and IStructE report on the Design and Construction of Deep Basements, 2004 (Ref.9), and is condensed in tables 4.1 to 4.3 below.

Table 4.1: Suitability of various wall types to form a water-retaining barrier.

Stabilisation/ Wall Type	Suitability as a Water-Retaining Barrier	
	Temporary Works Condition	Permanent Works Condition
King Post Wall	Not suitable	Not suitable
Sheet Piled Wall	Suitable(1)	Suitable(2)
Contiguous Piled Wall	Not suitable	Not suitable
Secant Piled Wall		
Hard / Soft	Suitable	Not usually suitable
Hard / Firm	Suitable	Suitable(2)
Hard / Hard	Suitable	Suitable(2)
Diaphragm Wall	Suitable	Suitable(2)

Notes:

(1) Some form of seal between sheets may be required depending on water pressures encountered. Potential de-clutching in coarse-grained soils may affect performance.

(2) Structural facing and/or drained cavities should also be provided for high-grade substructures/basements.

Table 4.2: Wall types for temporary and permanent soil support in basement construction.

Wall Construction (and brief description)	Temporary/ Permanent Support	Typical Wall depth	Typical Retained Height	Groundwater Control	Advantages	Disadvantages	Remarks
Steel Sheet Piling (can be used in combination with steel tubular piles to form combi-wall if increased flexural strength is required)	Temporary or permanent Support	10 to 15m (but very dependent on driveability) Max pile length 30m	8 to 12m as single propped wall	Wall can be designed to form a barrier to water	Can provide an economic solution. If used in the temporary case, sheet piles could be re used on completion.	Vibration and noise. Risk of declutching by obstructions. Considered very unlikely that sufficient embedment could be achieved	Large embedment will be required for sheet piles to resist retained soil and water levels. **The ability to achieve this embedment within the bedrock remains a significant risk item**
Contiguous R.C. piles (closely spaced bored in-situ concrete piles installed by Continuous Flight Auger (CFA)	Temporary and permanent support	12 to 20m	6 to 15m, propped or anchored	Not a water resistant wall. Additional groundwater control measures required in the temporary and permanent case such as facing with a reinforced concrete wall.	Economic when installed using CFA equipment. Minimal noise and vibration.	May not be appropriate where free groundwater flow is present. Additional thickness of overall wall construction to achieve water-exclusion must be considered when considering available area.	Unlikely to provide an appropriate solution for this basement structure in the permanent case due to the presence of free draining water from fissures in the mudstone.
Secant R.C. Piles, Hard/soft or Hard/firm secant (formed by installing over-lapping concrete piles. Male piles cut through the female pairs to form a solid wall)	Temporary and permanent support	12 to 20m propped or anchored	6 to 15m	Only water resistant in the short term unless stronger mixes of concrete are used for female piles	Favourable option in granular or water bearing soils where contiguous piles are unsatisfactory.	Limited durability unless a stronger mix of concrete is used for female piles.	Recommended as an option (for temporary and permanent support) further consideration. Assessment of durability required.
Diaphragm Wall (slurry-supported trench operations filled with tremied concrete)	Permanent (if temporary, will be left in place)	15 to 30m	12 to 25, propped or anchored	Water retaining	Wall surface may serve as the final finished surface. Water retaining	Minimum job size influenced by large mobilisation and demobilisation costs. Solution is appropriate for variable soil conditions.	Recommended as an option (for temporary and permanent support) further consideration. Assessment of durability required.

Table 4.3: Considerations of various basement construction types.

Construction Type	Construction Method	Floors	Walls	Resistance to water / Vapour Penetration		Comment(s)
				Primary	Secondary	
R.C. Box	Open Excavation	Monolithic	Integral	Low permeability concrete	Type 'A': External membrane	
R.C. Box	Temporary steel sheet piling	Monolithic	Integral	Low permeability concrete	Type 'C': Drained protection	Large embedment will be required for sheet piles to resist retained soil and water levels. **The ability to achieve this embedment within the bedrock remains a significant risk item**
Steel sheet piling	Excavate after installation	Become struts	Concrete facing	Weld joints	Type 'C': Drained protection	
Contiguous piles	Excavate after installation	Become struts	Substantial facing	Substantial facing	Type 'C': Drained protection	
Secant piles	Excavate after installation	Become struts	Facing	Facing	Type 'C': Drained protection	
Diaphragm wall	Excavate after installation	Become struts	As cast or faced	Low permeability concrete	Type 'C': Drained protection	

As may be apparent from table 4.2 and 4.3 above, a decision whether to rely entirely upon structurally integral (Type B) protection is crucial to the design and cost-effective construction of the basement.

Requirements for Deep Excavation Support (Temporary and Permanent Works)

In general, excavations in unweathered (Grade I) Mercia Mudstone give few stability problems when dry (though normal supports for excavations need to be provided or the side battered to a safe slope). However, CIRIA C570 states that "difficulties can occur when ground water inflows are allowed to soften the mudstone" and "a good knowledge of the ground water regime is thus essential before starting to excavate."

Excavation in the more weathered materials (Grades II – IVb) presents even more difficulties, when seepages from more sandy horizons can create internal erosion and potential failure of unsupported faces in excavations.

Vertical excavations will not remain stable for any length of time, and some form of support will need to be provided in the Temporary Works and Permanent Works situations. Therefore, excavation faces in these soils will need to be either battered back to a gradient that has adequate stability during the construction phase or supported by some form of retaining solution.

Given the high ground water levels present at this site (circa 1.0-2.5m begl) it is crucial that any stability support considerations incorporates appropriate ground water control systems to maintain adequate support in the short-term (Temporary Works condition) and the long-term (Permanent Works condition).

Monolithic Box Construction

This option involves structurally integral reinforced (or possibly pre-stressed) concrete floors and walls within open excavation or some form of appropriate temporary support mechanism. At this site, temporary works options could include:

- Open cut excavation
- Steepened slope open cut excavation.
- Contiguous piles

Whilst ordinarily steel sheet piles would also be considered suitable for temporary works support, given the large embedment likely to be required for the sheet piles to resist retained soil and water levels (even if appropriately strutted/anchored), the ability to achieve this embedment within the bedrock remains a significant risk item.

As discussed above (and tables 4.1 to 4.3) each of these options will require some additional form of groundwater control in the temporary works case, to maintain stability and/or facilitate construction. Temporary works support using secant piles or diaphragm wall would also be suitable (and could be constructed to provide sufficient groundwater control), though it is more likely that the cost-effective solution in these instances is to use the wall as the Type 'B' groundwater control mechanism in the Permanent Works case also.

Open cut excavation is applicable where the site has room to accommodate a safe soil batter (which is a function of the soil strength, groundwater conditions and appropriate analysis/risk assessment of the consequences of slope failure). A de-watering system will be required to depress the groundwater levels during construction period.

A reduced plan area of excavation could be achieved by increasing the inclination of the open cut excavation by using crib walls, gabion walls or soil nails/anchors. Whilst at first glance this option may appear expensive, given the depth of excavation required for this project, it may prove cost-effective relative to the requirements to provide lateral support to a vertical excavation method.

For this proposed development, given the relatively high groundwater level, the additional groundwater control measures and/or excavation volume is likely to make this option less cost-effective.

Steel Sheet Pile Wall

Steel Sheet Pile walling involves a series of interlocked steel sheet panels driven into the ground to provide structural support and (if required) a groundwater cut-off to the excavation.

The depth of excavation for this proposed development will be too high for a sheet pile wall to work in pure cantilever, and some form of additional lateral support will be necessary. This could take the form of temporary struts with waling beams, temporary/permanent anchors with waling beams, or temporary soil berms on the inside of the excavation.

Lateral groundwater control (both temporary and permanent) could be achieved by welding the joints between sheets, though in the permanent works condition the incorporation of an inner low-permeability concrete wall and/or Type 'C' drainage protection.

For this proposed development, even allowing for appropriate struts / anchors to reduce the necessary toe embedment required to achieve adequate wall stability, based on the SPT 'N' profile it is doubtful that the sheets can be driven to sufficient depth for this retention option to work, though it would be prudent to discuss this with a reputable specialist contractor prior to detailed design.

Contiguous Pile Wall

Contiguous piled walling involves a series of closely spaced bored in-situ concrete piles (installed by auger or continuous flight auger (cfa)). It tends to be used in clay soils where free-groundwater is limited.

By its very nature, this form of construction does not exclude groundwater inflow into the excavation and therefore:

- In the Temporary Works condition, additional groundwater control measures will be necessary and/or the gaps between piles plugged with in-situ concrete or jet grouting.
- In the Permanent Works condition, a substantial facing (e.g. Type 'B' R.C. wall) and/or drainage protection (Type 'C') will be required.

For this proposed development, the relatively high groundwater level, additional groundwater control measures and/or space required to accommodate an inner R.C. wall is likely to make this option less cost-effective.

Secant Pile Wall

Secant piled walls replace the requirement for 'structural' internal walls by installing augered and cased (or cfa) piles that are over-lapped to form a line of intermarried piles with a good structural bond. True secant walling (oscillator-formed piles) is accepted as a reasonable alternative to diaphragm walling in terms of forming a 'watertight' barrier, whilst pseudo-secant piled walls are not considered to be so effective.

The initial (female) piles may be concreted with 'normal' mix concrete (to form a hard-hard secant wall) or with a weaker grade concrete allowing the later (male) piles to cut into the female piles with less effort (hard-soft secant wall) thereby creating less deformation and potentially a more watertight interlock. Walls with an intermediate strength female pile component are also used (hard-firm secant).

Secant piles are usually preferred in granular water-bearing soils, which may be present in localised discrete horizons in this proposed excavation.

Hard-soft secant pile walls, installed by cfa rigs, often provide a competitive solution for temporary and permanent soil retention in water-bearing free-draining soils, though the cost and time required to install guide walls for secant pile installation should also be taken into account.

Secant pile walls can either be constructed in pure cantilever or, if required, incorporating lateral support in the form of (temporary or permanent) struts / anchorages or temporary soil berms to reduce the internal steel reinforcement and/or the toe embedment depth.

Diaphragm Wall

Diaphragm walls involve the use of a slurry-supported trench filled with tremied concrete to provide a wall for both temporary and permanent soil retention. They are well-suited to situations that require large-dimension wall sections and are appropriate for permeable and impermeable soils. Care needs to be taken in detailing the interlock between diaphragm panels, and with the implications of wall construction tolerances.

Diaphragm walls can either be constructed in pure cantilever or, if required, incorporating lateral support in the form of (temporary or permanent) struts / anchorages or temporary soil berms to reduce the internal steel reinforcement and/or the toe embedment depth.

Recommendation(s)

- Based on the preliminary data available, it is considered that the most practicable solution to the basement perimeter wall construction is either a secant pile or a diaphragm wall. Both these form of wall will provide support in the temporary and permanent stages, with a reasonable level of Type 'B' water-exclusion.
- Depending on more detailed groundwater analysis, consideration will need to be given to the incorporation of appropriate Type 'C' drainage protection measures into the design, though this carries long-term disadvantages as detailed in 4.3.2.
- Depending on the design detailing, if required, consideration could be given to incorporating lateral support to the retaining wall in the form of (temporary or permanent) struts / anchorages or temporary soil berms to reduce the internal steel reinforcement and/or the toe embedment depth.

- An alternative proposal would be the adoption of a monolithic box construction. This would enable Type 'A' barrier protection to be incorporated into the design thereby negating the long-term disadvantages of a Type 'C' drainage protection system. However, it would require more elaborate and expensive groundwater control measures particularly in the temporary works condition if constructed in open cut. As discussed below, the most effective groundwater measures may represent some form of cut-off wall (e.g. diaphragm wall).
- Given that the costs of excavation and construction to the proposed depth are likely to be considerable (whichever construction methodology is utilised), an alternative proposal would be to reduce the depth of excavation required (if possible) by selecting alternative plant for the energy recovery processing.

4.3.4 Groundwater Control Considerations

As detailed above, an understanding of the groundwater regime is crucial to cost-effective design of the proposed construction of both the temporary and permanent works.

The preliminary ground investigation has identified a groundwater table varying between ≈44.5mOD and ≈46.8mOD (average ≈46.0mOD), with a slight hydraulic gradient from north to south across the site. In general, groundwater strikes occurred as discrete seepages from the made ground soils (possibly perched groundwater) and seepages/inflows through fissures in the weathered Mercia Mudstone stratum.

In addition to the above data, as discussed in section 4.3 'Groundwater Hydraulics', BH20 encountered potential confined groundwater conditions with potential artesian water pressures at a depth of approximately ~13.0 to 16.0m bgl (≈34.8-31.8mOD).

Groundwater will influence the design and construction of the basement and its excavation in the following ways:

- Increased lateral forces on any excavation retaining walls.
- Increased instability of any open cut excavation(s).
- Requirements for groundwater exclusion / control in the permanent works (as discussed above).
- Requirements to prevent heave of the excavation (temporary works) and/or floor slab (permanent works).

On the basis of the existing groundwater data, assuming an excavation depth of ≈9.0mbegl (38.8mOD), in the absence of any de-watering measures the walls to the basement excavation may have to withstand ≈8-9m head of water and the floor slab a hydraulic uplift pressure of ≈90kN/m^2. Based on the highest artesian pressure measure to date in BH20 of ≈48.7mOD, this equates to an hydraulic uplift pressure of ≈139kN/m2 at 34.8mOD below the base of the excavation with ≈4m of overburden (≈80kN/m^2) in the temporary works condition and 104kN/m^2 in the permanent works condition (assuming 1.0m thickness slab and no plant loadings).

Therefore, on the basis of the existing groundwater data and present proposed excavation depth, the excavation for and construction of the floor slab needs to accommodate either some form of groundwater de-watering measures and/or structural measures to prevent hydraulic uplift (heave) in the temporary and permanent works conditions.

Pumping From Sumps

Whilst pumping from sumps is the most widely used form of groundwater control, in the context of this site with deep excavation combined with high head of water its use to control groundwater to facilitate open cut or contiguous piled wall excavation may only result in internal erosion and potential failure of unsupported faces / sections in excavations.

The greatest depth to which the water table may be lowered using this technique is generally about 6m, so the existing proposed excavation will require staged lowering of the pumping level and/or submersible deep-well pumping.

Pumping from sumps will also provide only limited contribution to alleviate hydraulic uplift pressures at the base of the excavation.

On its own pumping from sumps is unlikely to comprise an adequate form of groundwater control for the deep excavation though, as discussed below, it can be of use if combined with other forms of control (e.g. partial cut-off).

Well-pointing

Well-pointing involves lowering the groundwater table by installing a number of filter wells outside the excavation. It has the advantage that water is drawn away from the excavation face, thus increasing the stability of the sides and (potentially) permitting open cut excavation. However, unless also installed at a level below the base of the excavation this technique will provide little contribution to alleviate hydraulic uplift pressures at the base of the excavation due to any underlying zones of (sub-)artesian water pressure.

This methodology is also most effective in granular soils with moderate permeability, and is therefore unlikely to be particularly effective in the relatively impermeable cohesive soils underlying this site, where water ingress into the excavation is likely to be predominantly via fissures than mass (primary) permeability.

Creation of a cut-off

The adoption of a seepage cut-off around the perimeter of the excavation is likely to be feasible to control groundwater pressures beneath the excavation in the temporary works condition, particularly if combined with groundwater pressure relief / drainage wells on the inside of the excavation.

Because it will probably enable groundwater to be controlled within the limits of the excavation, the creation of a cut-off has other benefits when combined with some other form of de-watering:

- It will limit the extent of any potential drawdown effects on adjacent structures/vegetation beyond the excavation.
- Pumping volumes (and hence costs) may be considerably reduced (though the economics of this needs to be balanced against the costs of extra cut-off walling).

However, because the existing data suggest it will be difficult to create a total rather than a partial cut-off in the underlying strata, a cut-off solution on its own will not reduce potential hydraulic uplift pressures on the floor slab in the permanent condition unless combined with long-term groundwater pressure relief / drainage wells.

The creation of a cut-off lends itself to a diaphragm wall or secant piled wall form of construction solution.

Pressure Relief Wells

Given the relative low permeability of the underlying soils (even the localised potential artesian layer encountered in BH20), the installation of pressure relief wells probably represents the simplest and most cost-effective way of controlling the risk of heave of the base of the excavation due to hydraulic uplift. They comprise a series of boreholes (or trenches) filled with gravel constructed into the base of the excavation. These are then connected to a layer of coarse gravel at formation level, allowing water flowing up the wells to escape to a pumping sump.

The flow, and therefore the pressure relief, must be maintained while casting the base slab and until an appropriate solution to problem of basal heave in the permanent works condition is completed. Alternatively, they can be incorporated into the permanent works design of the basal slab to control hydraulic uplift and form part of the Type 'C' drainage protection measures.

Ground Freezing

Ground freezing may represent a potential method to control groundwater inflow during the construction phase. However, not only is it an extremely expensive form of ground treatment but it may also cause considerable heave in the near-surface silty clay soils, which may have a significant effect on the design of the adjacent structures.

Drilling and Grouting

The method involves drilling a series of holes around the perimeter (and base) of the excavation and infilling them with liquid grout under pressure. The grout permeates into the fissures/fractures in the soil/rock in the vicinity of the drillhole, thereby reducing the permeability of the ground. By undertaking this form of ground treatment in a series of rows around the excavation (e.g. 2 rows of primary holes, followed by a set of intermediary secondary and possibly even tertiary holes) it is possible to create a near-impermeable grout curtain around the entire excavation. The depth of this curtain could also be extended below the depth of the excavation to reduce potential groundwater inflow from the base.

This methodology is also most effective in high permeability granular soils or fractured rock formations, and is therefore unlikely to be particularly effective in the relatively impermeable cohesive soils underlying this site, where water ingress into the excavation is likely to be predominantly via fissures than mass (primary) permeability.

Recommendation(s)

- At present the data available on the groundwater regime beneath the site is only preliminary. Clearly, there are aspects that potentially will have very significant implications on the cost of the design and construction of the proposals to limit risks to an accepted level. Consequently, as part of the ground investigation to provide data for detailed design, it is imperative that sufficient instrumentation and monitoring of the groundwater regime is undertaken to provide data for economic and safe construction. It is anticipated that this will include the installation of vibrating wire piezometers at discrete levels around the proposed structure, linked to datalogger systems to enable any fluctuations in groundwater levels and artesian water pressures to be ascertained.
- Based on the preliminary data available, it is considered that the most practicable solution to the control of groundwater in the temporary works condition is a partial cut-off wall (which can form the permanent basement perimeter wall) combined with basal pressure relief wells.

- This combination has the advantage that the pressure relief wells may be incorporated into the permanent works design of the basal slab to control hydraulic uplift and form part of the Type 'C' drainage protection measures.
- As part of the recommendation made in section 4.3.3, it is clear that the costs of excavation, construction and de-watering of the excavation are likely to be considerable. Consequently, it may be economic to consider an alternative proposal that involves a reduced the depth of excavation (if possible) by selecting alternative plant for the energy recovery processing.

4.3.5 Basal Slab Design

As discussed above, the design of the basal slab needs to be designed taking cognisance of the potentially very high long-term hydraulic pressures to prevent the risk of catastrophic heave which might then lead to failure of the surrounding retaining walls.

In the absence of any groundwater control measures, based on preliminary data available to date, these pressures could be of the order of 90kN/m^2 at the proposed formation level.

The magnitude of these forces, and the geometry of the proposed basement structure, means it is very unlikely that these forces can be accommodated by shear resistance on the side walls.

Whilst it would be possible to withstand the uplift pressures by anchoring the basal slab via anchorages and/or tension piles constructed on a grid basis, given the magnitude of the uplift forces it is likely that the basal slab will need considerable reinforcement to span between each anchorage point.

Based on the highest water pressures measured to date, in the absence of any groundwater control measures, to prevent hydraulic uplift by mass of basal slab alone (i.e. excluding any plant loads), would require a formation level of ≈32.8mOD (i.e. a 7m thick slab) which is very unlikely to be cost-effective.

At this stage, therefore, it is recommended that outline design of the permanent works solution comprises a combination of:

- Basal pressure relief wells.
- Thickened basal slab.
- (if required) supplementary ground anchorages and/or tension piles.

Clearly, to enable cost-effective and safe detailed design of these elements it is crucial that further appropriate ground investigation is undertaken to gain more detailed understanding of the groundwater regime beneath this site.

5 OTHER CONSIDERATIONS

5.1 Re-Use Of Excavated Materials

If the re-use of site won material is proposed, either on-site or for other purposes off-site, it is important that the various stratum groups are appropriately segregated (particularly the made ground) to prevent the risk of cross contamination. It is anticipated the made ground would need to be sorted and screened with the oversize material sent for off-site disposal. The remaining made ground should be suitable for use as backfill material and landscaping provided it meets the earthworks material properties requirements.

Furthermore the fully weathered/partially weathered Mercia Mudstone and unweathered Mercia Mudstone should remain segregated to allow for separate re-use strategies. If they are mixed then the material may be rendered unsuitable for particular end-uses.

Stockpiling and storage of the excavated topsoil, superficial deposits and weathered bedrock will be required in order that these may be re-used. The stockpile should be sealed to prevent rainfall infiltration into the material and preventative measures for control of excavated material and suspended solids from entering any water courses must also be considered. These measures may include temporary drainage ditches, stockpile sheets, geo-textile wrap, straw bales and silt traps.

Preliminary test results indicate that the fully weathered/partially weathered Mercia Mudstone will be suitable for re-use as Class 2 general fill in accordance with the Specification for Highway Works Series 600 Earthworks criterion (Class 2A/2B/2C depending on stone content and/or moisture content). It is anticipated the majority of these materials will fall into Class 2B dry cohesive, and very stiff/hard clay material excavated from deeper levels may need to be improved by the addition of water (via spray irrigation) to soften them sufficiently to facilitate adequate re-compaction.

Superficial Deposits and near-surface weathered Mercia Mudstone material may be too soft (wet) in its 'as-excavated' condition to be suitable for re-compaction as engineered fill. Preliminary laboratory tests undertaken in the GIP investigation indicates that these soils may be improved by the addition of lime (or cement) to render them suitable for re-use as engineered earthworks materials, though it is recommended additional testing be undertaken at the detailed design stage to further clarify this issue.

Unweathered Mercia Mudstone material is likely to be suitable for re-use as either Class 2C (stony cohesive) or Class 1 (general granular) fill depending on the strength of the rock and its response to crushing by compaction plant.

The relatively low plasticity of the Mercia Mudstone stratum soils means they are likely to be very susceptible to softening in the presence of free or standing excess water (even the weak mudstone variants). Consequently, it is crucial to ensure that any excavations are kept free of ponding water (if at all possible) and that excavation for material proposed for re-use as engineered materials is not undertaken during periods of prolonged and/or heavy rainfall.

Based on a very approximate estimate from the preliminary ground investigation data available, approximately 20-25% of the material likely to be excavated from the basement area will comprise made ground soils.

Preliminary laboratory tests undertaken in the GIP investigation indicates that the cohesive made ground soils would be suitable for re-use as general cohesive fill, though again material that is too soft (wet) in its 'as-excavated' condition may be improved by the addition of lime (or

cement) to render them suitable for re-compaction. Testing on samples of granular made ground indicated it to be suitable for re-use as Class 1 general granular fill. All of the made ground soils will need to be carefully screened to remove unsuitable inclusions (e.g. timber, concrete blocks, textile, metal) that will prohibit adequate re-compaction.

The chemical test results indicate that the vast majority of the made ground soils are likely to be suitable for re-use as engineering or landscape fill material, with the exception of one sample that provided unacceptably high levels of lead content. Consequently, as part of the ground investigation for detailed design, it is recommended that additional testing of samples be undertaken in this area to further delimit the extent of this contamination.

None of the soils likely to be won from site are likely to be suitable for re-use as selected (Class 6) fill material.

It is understood that enquiries have been made by Mercia Waste Management to companies to make use of the excavated natural materials for specialist re-use as brick manufacture and/or landfill site capping materials. Should this become the agreed end use, this material will need selecting, stockpiling and transporting off site as part of the works.

5.2 Protection of Buried Concrete

In accordance with BRE Special Digest SD1 (Ref. 12), sulphate content and pH value testing was carried out on selected soil samples between 0-8m bgl.

The test results lie within the limit of Sulphate Design Class DS-1, as defined within the BRE guidelines. The minimum pH value is 7.77 and the maximum sulphate value is 50 mg/l. The groundwater regime is considered as static between 1-8m bgl, therefore an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1s is considered appropriate.

5.3 Road Pavement Design Considerations

Five in-situ California Bearing Ratio (CBR) Tests were carried out on near-surface soils within the GIP ground investigation, on made ground (granular and cohesive) and cohesive natural soils. These tests produced CBR values of between 3.1% and 4.4%, indicative of cohesive soils with undrained shear strength of 75-100kN/m^2.

The majority of the descriptions and insitu tests (SPTs, HSVs) of the cohesive near-surface (<1.0m) soils suggest undrained shear strength of 50-60 kN/m^2, indicative of a CBR value of ≈2%.

Based on an upper bound Plasticity Index value for the cohesive near-surface (<1.0m) soils of 40%, an equilibrium CBR value of ≈2.5% is estimated based on a high-water table and poor-average construction conditions.

On the basis of the above, it is recommended that a preliminary subgrade CBR value of 2.5% is adopted for outline design. Because the made ground soils will be vary variable in their deformation modulus value (stiffness), consideration should be given to the incorporation of appropriate geogrid reinforcement at the base of the pavement foundation to ameliorate any variations. This will also enable the thickness of capping / sub-base to be reduced.

Some of the likely subgrade soils are likely to be very susceptible to softening in the presence of excess water. Consequently, it is crucial to ensure that formations are not exposed to significant and/or prolonged rainfall.

5.4 Soakaway Drainage

In-situ percolation tests in general accordance with BRE Digest 365 "Soakaway Design" as part of the GIP ground investigation produced negligible percolation, indicating that soakways will not represent a suitable form of surface water disposal on this site.

5.5 Former Well

Within the GIP report, a possible well is detailed within area 600A. It states that previous works identified what was believed to be an open well which was full of water and brick rubble. It is not believed to have been stabilised and this will require further consideration prior to development.

The GIP report provides recommendations such as if the well is shallow (less than 3.0m) it may be possible to excavate out and replace it with a suitable well compacted granular material. If the well is deeper then backfilling may require grouting and capping of the feature.

Further investigation should be undertaken in the area of this possible well to determine the appropriate measures required to backfill this feature. Depending on the depth of the well and the backfill material, this may form a receptor for groundwater and should therefore be considered further in respect of groundwater contamination once additional information is obtained.

5.6 Construction Phase Ground Investigation

An additional ground investigation is required to confirm the detailed design for the temporary and permanent works for the development.

These currently comprise a combination of ;-

- Deep excavations
- Slope stability of the excavation
- Basal pressure relief wells.
- Thickened basal slab.
- Temporary and permanent water proofing of the structures
- Supplementary ground anchorages and/or tension piles.
- Shallow foundations for light structures
- Associated infrastructure
- Long term drainage

Clearly, to enable cost-effective and safe detailed design of these elements it is crucial that further appropriate ground investigation is undertaken to gain more detailed understanding of the groundwater regime beneath this site, specifically to determine the permeability of the materials to be excavated and to record the water levels both within and outside of the proposed excavation areas

As part of the ground investigation to provide data for detailed design, it is imperative that sufficient instrumentation and monitoring of the groundwater regime together with a pumping trial is undertaken to provide data for economic and safe construction.

In terms of the assessment of made ground and potential contamination plus obstructions within this strata, an extensive grid of trial pits will require excavating and suitable testing undertaken. Part of the investigation boreholes will be to focus on the strength of materials between 8 to 12mbgl to provide additional design information for pile and anchor design as well as being used for groundwater instrumentation.

It is anticipated that this will include the installation of vibrating wire piezometers at discrete levels around the proposed deep excavation structure, linked to datalogger systems to enable any fluctuations in groundwater levels and artesian water pressures to be ascertained, These will also be an utilised to assess a series of step tests and full pumping tests at, at least one, possibly two locations.

Ongoing gas and ground water monitoring would be required before, during and after construction; where possible wells should be located well away from the proposed construction area to prevent damage during the construction works to provide long term monitoring.

To achieve the detailed assessment of the made ground strata and its potential contamination and obstruction issues an extensive grid of trial pits will be required together with suitable contamination testing undertaken.

With regards the main excavation additional boreholes will be required, particularly to focus on the strength of the strata between 8 and 12 metres depth below ground level to provide additional detailed design information for pile and/or anchor selection and design of temporary and permanent works including groundwater control.

Hence the detailed construction phase investigation will consist of;-

Trial pits with contamination testing

Boreholes down between 15 to 20 metres with insitu testing and monitoring instrumentation for both ground water and gas.

Static cone Penetrometer testing with dissipation testing.

Drilling installation of between one to two pump wells.

Pumping tests.

At this time, prior to confirmation of planning and any conditions that might be applied which could affect the overall design of these ground investigation works we have not provided a detailed B of Q as this may be subject to change.

6 REFERENCES

1 Hyder Consulting Limited, Deskstudy Report, Mercia EnviRecover Renewable Energy Facility, Report Ref 5001-LN01323-NER-01, February 2010.

2 Hyder Consulting Limited, Geotechnical Interpretative Report (Outline Design), Mercia EnviRecover Renewable Energy Facility, Report Ref 5003-LN01323-NER-01, April 2010.

3 Hyder Consulting Limited, Factual Report Mercia EnviRecover Renewable Energy Facility, Report Ref 5004-LN01323-NER-01, March 2010.

4 Hyder Consulting Limited, Contaminated Land Interpretative Report, Mercia EnviRecover Renewable Energy Facility, Report Ref 5005-LN01323-NER-01, April 2010.

5 CIRIA, C570 "Engineering in Mercia Mudstone", 2001.

6 British Standards Institution (BSi), (1990). BS1377:1990, Methods of Test for Soils for Civil Engineering Purposes. BSi, London.

7 Tomlinson, M.J., Foundation Design and Construction, 7th Edition, 2001

8 Pettifer, G.S. & Fookes P.G., 1994. A revision of the graphical method for assessing the excavatability of rock. Quarterly Journal of Engineering Geology 27, pp. 145-164.

9 IStructE, Design and construction of deep basements including cut-and-cover structures, 2004.

10 Concrete in aggressive ground, Special Digest 1:2005, 3rd Edition, The Concrete Centre, BRE Construction Division.

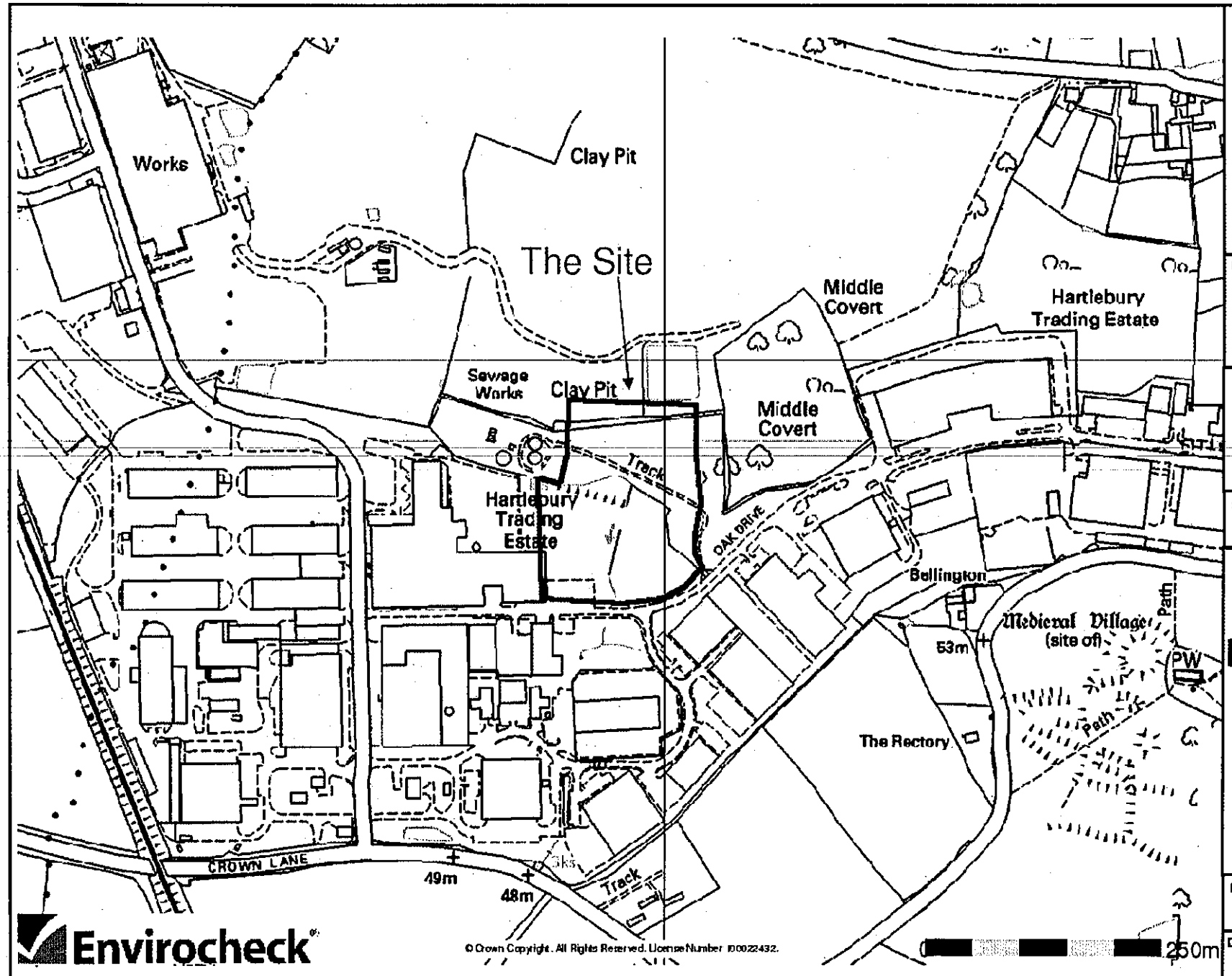
11 BS 8102 : 2009 Code of Practice for protection of below ground structures against water from the ground.

12 CIRIA Report 139, Water-resisting Basements (1995)

13 CIRIA Report 140, Water-resisting Basements (Summary Report) (1995)

Appendix A

Site Location Plan



Client

mercia waste management

Project: Mercia EnviRecover Renewable Energy Facility

Title: Site Location Plan National Grid Reference 385950,269850

Scale	Datum
NTS	N/A

Hyder

Hyder Consulting Ltd
HCL House
Fortran Road
Cardiff CF3 0EY

Tel: 029 20925000
Fax: 029 20925222

Project Code: LN01323

Drawing No.	Issue
Figure 1	1

Appendix D – Hyder Factual Report

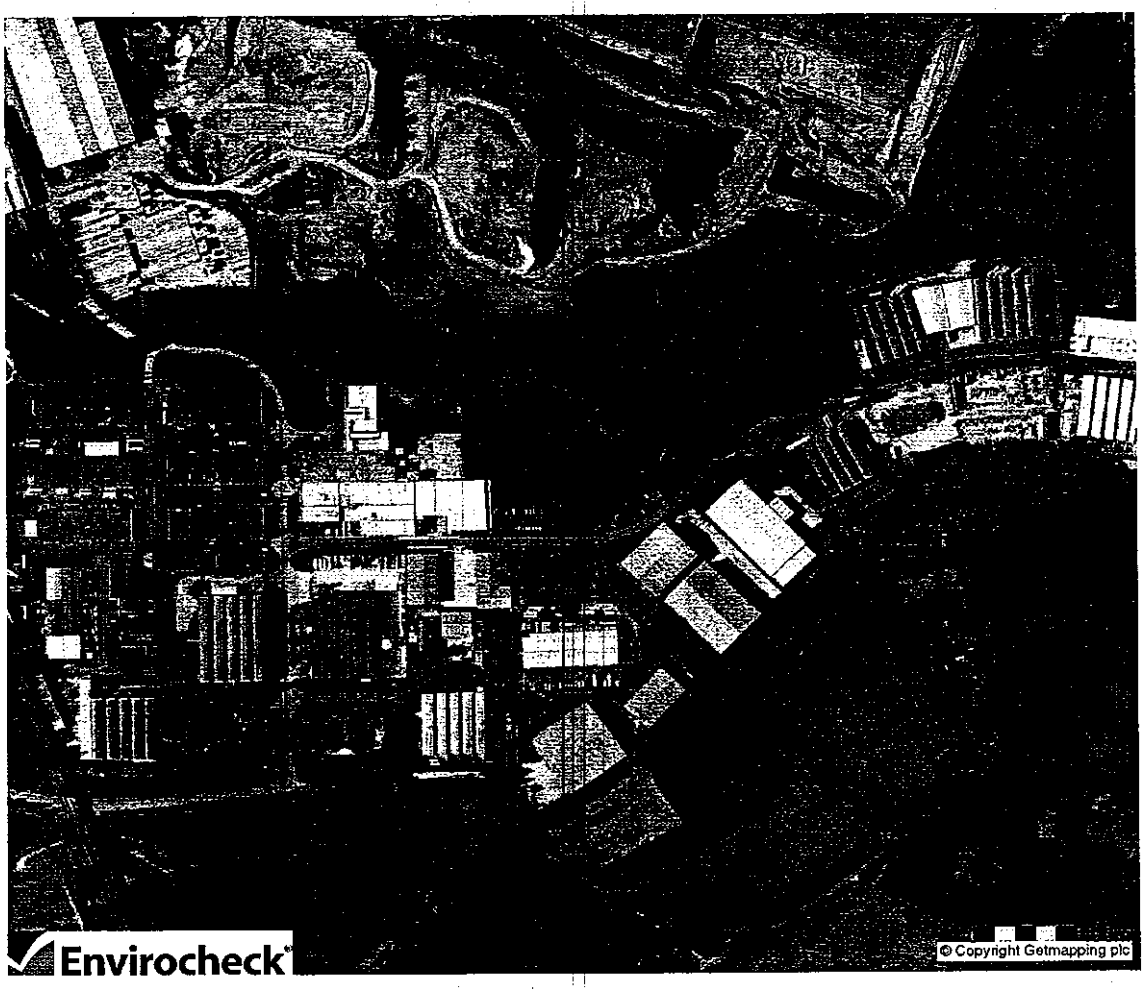
Hyder

mercia
waste management

Mercia Waste Management

Mercia EnviRecover Renewable Energy Facility

Factual Report



Hyder Consulting (UK) Limited
2212959
5th Floor
The Pithay
All Saints Street
Bristol BS1 2NL
United Kingdom
Tel: +44 (0)117 372 1500
Fax: +44 (0)117 372 1508
www.hyderconsulting.com

Mercia Waste Management

Mercia EnviRecover Renewable Energy Facility

Factual Report

[redacted]

Author [redacted]

Checker [redacted]

Approver [redacted]

Report No 5004-LN01323-NER-01

Date 19 March 2010

This report has been prepared for Mercia Waste Management in accordance with the terms and conditions of appointment for Factual Report dated 14th January 2010. Hyder Consulting (UK) Limited (2212959) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

CONTENTS

Appendices

1 INTRODUCTION

Hyder Consulting (UK) Ltd has been commissioned by Mercia Waste Management in 14th January 2010 to undertake a ground investigation between 4th and 16th of February 2010. This factual report details the work carried out on-site, the strata encountered, groundwater observations and details subsequent geotechnical and contamination laboratory testing from the investigation

The report provides the exploratory hole logs and geotechnical and contamination laboratory results. The factual report has largely been used to interpret the ground conditions and is refered to within the Interpretive Report (Ref.1).

1.1 Background and Purpose of the Works

The Joint Municipal Waste Management Strategy (JMWMS) for Herefordshire and Worcestershire, 2004-2034, has highlighted the need for dealing more effectively with the waste left over after recycling (referred to as 'residual waste').

In a review of the JMWMS undertaken by the Joint Members Waste Forum, a number of scenarios for managing residual waste were examined using a computer model called WRATE. Following this assessment, the option of a single site Energy-from-Waste plant with combined heat and power (CHP) capabilities was identified as the optimum solution, resulting in the Mercia EnviRecover 15.5MW renewable energy facility.

The purpose of the investigation was to explore ground conditions across the site. This will enable an Environmental Impact Assessment to be undertaken by identifying the likely impact on the environment of the energy facility. The ground investigation also provides information for the foundations, excavation and contamination issues surrounding the development of the Mercia EnviRecover energy facility.

1.2 Scope

The ground investigation has been carried out using cable percussive drilling methods, rotary coring and trial pitting using a 13 tonne tracked excavator. The field work was carried out in general accordance with the recommendations of BS5930:1999 Code of Practice for Site Investigation and with BS10175 Investigation of Potentially Contaminated Sites: Code of Practice (2001).

A comprehensive desk study has already been carried out and received by Mercia Waste Management which has been used to inform the ground investigation.

Testing to detect the presence of ground gas was not carried out during the investigation itself although phases of gas and groundwater monitoring are being carried out from all boreholes as part of a continuous three month monitoring programme.

All information provided within this report is based on the ground conditions encountered during the site works. However, sub soils are by their very nature hidden from view and no investigation can be exhaustive to the extent that all issues are revealed. It should be noted also that ground water levels typically vary seasonally.

2 THE SITE

2.1 Location and Description

The site is located approximately 9km south-south-east of Kidderminster, within the Hartlebury Trading Estate, Worcestershire.

The site comprises of a small parcel of land with an estimated surface area of 3.3 hectares. The Ordnance Survey National Grid Reference at the centre of the site is 385950,269850.

A site location plan is shown in Appendix A.

2.2 Published Geology

The 1:50,000 scale British Geological Survey (BGS) Digital Geological Maps for the area, as provided within the Envirocheck Report used for the desk study have been used to identify the likely underlying geological conditions at the site.

Superficial deposits are not shown on the geological map, as there is an insignificant thickness. The solid geology beneath the topsoil and subsoil is shown to comprise mudstone of the Mercia Mudstone Group (MMG).

2.3 Published Hydrogeology

The National Soil Resources Institute Soils Site Report classifies the soil on site as having an intermediate leaching potential. These are soils, which have a moderate ability to attenuate a wide range of diffuse source pollutants but in which it is possible that some non-adsorbed diffuse source pollutants and liquid discharges could penetrate the soil layer.

The Hyder desk study classes the underlying Geology as a Non-Aquifer (Negligibly permeable), which would correspond with the identified geology. Non-aquifers are formations, which are generally regarded as containing insignificant quantities of groundwater. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants.

There are no licensed groundwater abstractions recorded within a 500m radius of the site and the site does not lie within a Groundwater Source Protection Zone.

2.4 Statutory Service Information

All service information was held by the Engineer with the relevant plans and information made available to Hyder by the client prior to the commencement of the intrusive works. Standard procedures for breaking ground were followed including the undertaking of hand excavated inspection pits at exploratory hole locations and the use of a CAT scan to detect the presence of any underlying services.

2.5 Previous Investigations

Further details on the ground conditions on site and in the vicinity of the site (1km to the NW), have been obtained from an on-site ground investigation (undertaken in 2006 by Ground Investigation & Piling Ltd and from a BGS report on the Hartlebury Landfill site located 800m to 1km north-west. These sources confirm that the site is underlain by between 5m and 7m of superficial deposits (average of 6.2m), comprising an uppermost stratum of Made Ground, overlying firm to stiff clay. Bedrock is initially comprised of weak, red-brown mudstone (as part of the Mercia Mudstone Group).

More detailed geological classification for the area is obtained from the BGS report, which confirms the solid geology of the MMG in the area as comprising an uppermost stratum of the Sidmouth Mudstone Formation (~up to 30m thick) and a lowermost stratum of the Tarporley Siltstone Formation (~up to 20m thick). The MMG is underlain by the Bromsgrove Sandstone Formation at depths ranging from 30m to 60m below ground level (bgl).

3 FIELDWORK

The scope of investigation and location and depth of boreholes and trial pits has been defined and scoped up by Hyder Consulting Limited. Supervision and logging of the field work was carried out by a Hyder Engineer and the drilling sub-contractos appointed were CJ Associates.

The field work was carried out between the 4th to the 15th February 2010. The completed scope of the ground investigation is as follows:

- 4 no. cable percussive boreholes to maximum depths of 10mbgl with alternating SPTs and U100 to 5mbgl at 1m intervals and SPTs and U100 where possible at 1.5m intervals at depth greater than 5mbgl.
- 3 no. rotary cored boreholes to maximum depth of 20mbgl with SPTs at 1m intervals to5mbgl and SPTs and 1.5m intervals at depth greater than 5mbgl. Window sampling techniques
- 4 no. trial pits to depths of 5mbgl.
- 6 no. trial pits to depths of 2mbgl.

4 Sampling

Bulk samples for the purpose geotechnical testing were taken at regular intervals or at changing strata in all exploratory holes with the exception of shallow trial pits. U100s were also taken every 2m within the top 5m and where possible at greater depths.

Environmental samples were taken predominantly within the made ground in particular where olfactory or visual signs of contamination were noted by the site engineer. Samples were also taken within the strata directly below the made ground.

Groundwater monitoring was carried out in the majority of the holes during the site investigation. Gas and groundwater monitoring will be carried out in further monitoring stages.

5 In situ Testing

5.1 Falling/rising head tests

Two rising falling head tests were carried out successfully within 1-8mbgl. This targeted the fully weathered horizon of the Mercia Mudstone. Falling head tests were carried out in accordance with BS1377:1990 Part 9.

5.2 Shear vane

Shear vanes were taken in the trial pits to depth of 0.5m bgl and at greater depths than this sear vanes was attempted in the soil heaps where cohesive lumps were still intact. Shear vanes were carried out in accordance with BS1377:1990 Part 9.

5.3 SPTs

SPTs were carried out by the drillers every other meter to 5m bgl and at every 3m at depths greater than this. SPTs were carried out in accordance with BS1377:1990 Part 9.

6 Installations

All boreholes were installed with both gas and groundwater monitoring standpipes with the design targeting specific levels in order to asses contamination, permeability and groundwater levels within a chosen strata.

There are 4 shallow boreholes which target the shallow fully weathered Mercia Mudstone. The three deeper boreholes target both the deep horizons of weathered mudstone and the whole of the Mercia Mudstone formation.

The exploratory holes and in-situ test locations set out by the Hyder engineer was picked up by an approved surveyor to local grid co-ordinates (refer to Appendix A).

7 LABORATORY TESTING

A full set of laboratory test results can be found in Appendix C.

7.1 Geotechnical laboratory testing

The following tests were carried out in accordance with BS1377:1990 Methods of test for soils for civil engineering purposes parts 1 to 8:

Type of Test	Standard	Number of Samples
	Geotechnical & Chemical Tests	
moisture contents	BS1377:1990 Part 2:3	15
atterberg tests	BS1377:1990 Part 2:4&5	15
particle density	BS1377:1990 Part 4	4
density tests	BS1377:1990 Part 4:5	7
PSDs (Particle Size Distribution)	BS1377:1990 Part 2:9	13
sedimentation tests	BS1377:1990 Part 2	1
compaction tests	BS1377:1990 Part 4	6
one-dimensional consolidation tests	BS1377:1990 Part 6	3
consolidated undrained triaxial tests	BS1377:1990 Part 6	3
pH	BS1377:1990 Part 3	13
2:1 soil/water extract	BS1377:1990 Part 3	13

7.2 Chemical laboratory testing

Analysis was carried out using a UKAS/MCERTS accredited laboratory.

11 samples from the made ground and 4 samples from the natural material were tested as soil and as leachate. The following tests were carried out on each criterion:

	Contamination Tests	
Soil	**Standard**	**Number of samples**
Metals (arsenic, cadmium, chromium, nickel lead copper zinc, mercury and selenium)	MCERTS Accredited	15
Speciated PAH (USEPA 16)	MCERTS Accredited	15
TPH (Total Petroleum Hydrocarbons) 6 banded	MCERTS Accredited	15
Asbestos Screen and Microscopy	MCERTS Accredited	5
Soil Organic Matter (SOM)	MCERTS Accredited	6
Leachate		

Metals (arsenic, cadmium, chromium, nickel, lead copper zinc, mercury and selenium)	MCERTS Accredited	15
Speciated PAH	MCERTS Accredited	15
TPHCWG	MCERTS Accredited	15
Chloride	MCERTS Accredited	15
Ammonia		15

Groundwater samples

Five ground water samples taken from the boreholes and tested for the following:

Groundwater	Standard	Number of samples
Metals (arsenic, cadmium, chromium, nickel, lead copper zinc, mercury and selenium)	MCERTS Accredited	5
Speciated PAH (USEPA 16	MCERTS Accredited	5
TPH CWG	MCERTS Accredited	5
Chloride	MCERTS Accredited	5
Ammonia (Ammoniacal nitrogen as N)	MCERTS Accredited	5

8 REFERENCES

Hyder Consulting Limited, Geotechnical Interpretative Report, Mercia EnviRecover Renewable Energy Facility, March 2010.

Landmark Envirocheck, Envirocheck report for Mercia EnviRecover Renewable Energy Facility Deskstudy. Obtained by Hyder January 2010.

British Geological Survey, 2009. Hartlebury Landfill Site: conceptual Site Model Update. Groundwater Pollution Programme. External Report XX/00/00

BS5930:1999 Code of Practice for Site Investigations

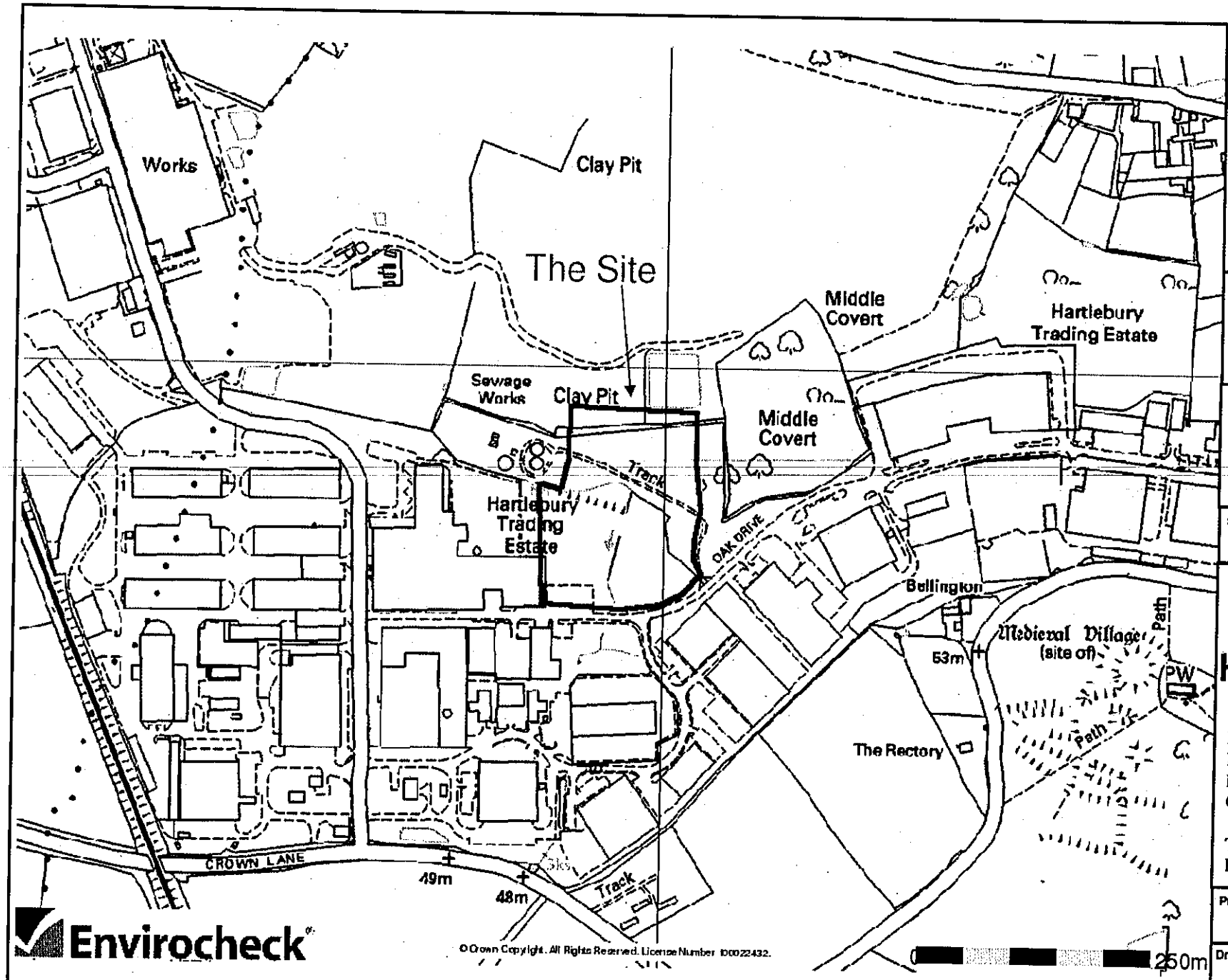
BS1377:1990 Methods of Test for Soils for Civil Engineering Purposes

BS10175:2001 Investigation of Potentially Contaminated Sites: Code of Practice.

Ground Investigation & Piling Ltd., 2006. Ground Investigation and Test Report for Proposed Fibrecycle Plant, Site H600 Hartlebury Trading Estate, Kidderminster.

Appendix A

Site Location Plan
Exploratory Hole Location Plan



Client

mercia waste management

Project: Mercia EnviRecover Renewable Energy Facility

Title: Site Location Plan National Grid Reference 385950,269850

Scale	Datum
NTS	N/A

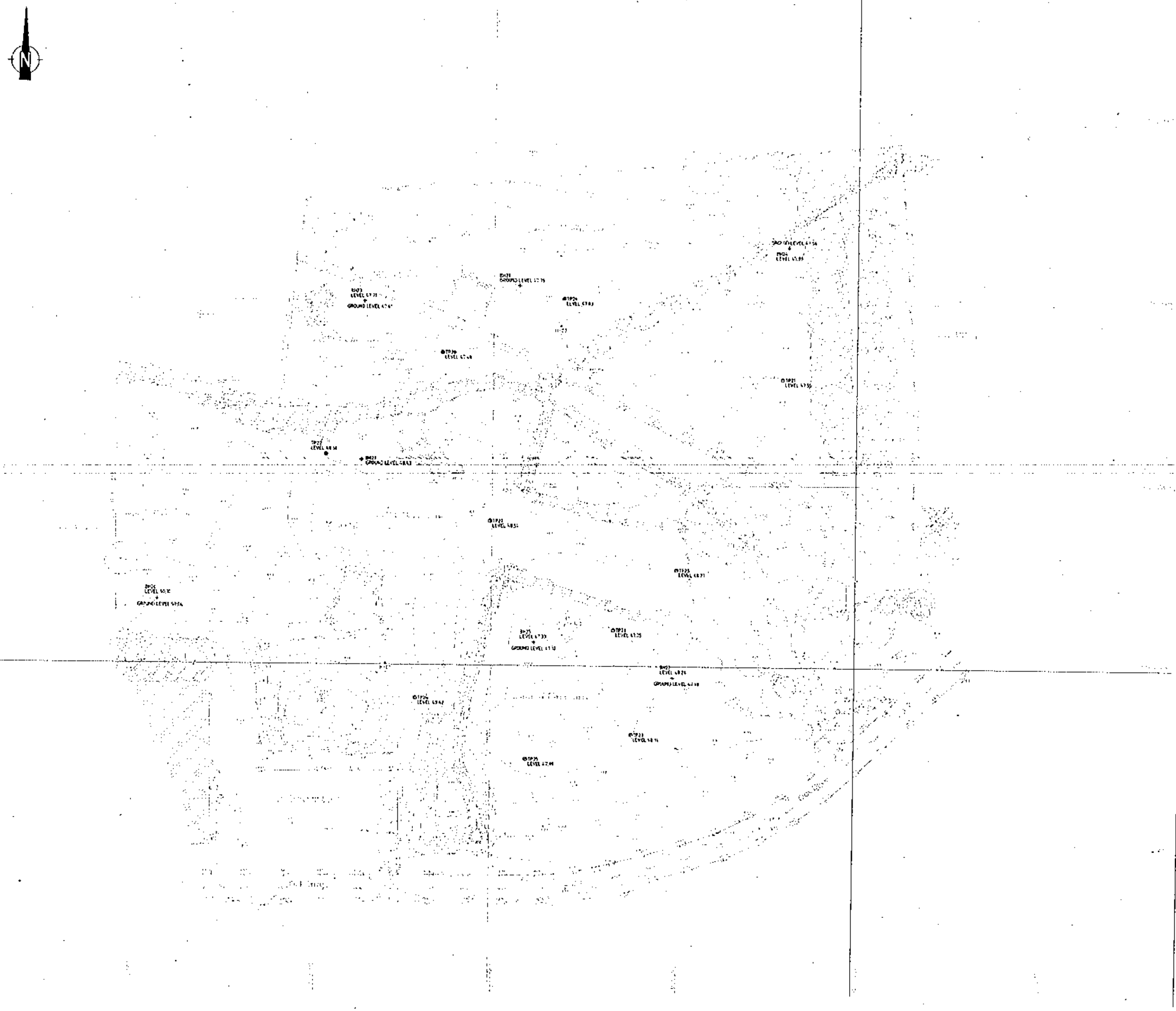
Hyder

Hyder Consulting Ltd
HCL House
Fortran Road
Cardiff CF3 0EY

Tel: 029 20925000
Fax: 029 20925222

Project Code: LN01323

Drawing No.	Issue
Figure 1	1



Notes

1 The Survey is based on Ordnance Survey coordinates & levels related to WGS84 & OSTN02.
2 Fences shown are not necessarily legal boundaries.
3 Dimensions should not be scaled. All dimensions should be checked on site before any fabrication / construction.
4 All drainage connections shown are sounded only. They have not been water tested.
5 Copyright of all data produced by Hyder shall remain with Hyder unless otherwise specifically agreed.
6 Information provided should not be altered or modified in any way. It should not be used for any purpose other than for which it was intended and should not be issued to other parties without prior agreement of Hyder.
7 Hyder cannot accept responsibility for any damage to computer systems which may result from viruses which may be contained in the data provided.
8 Preliminary data is generally unchecked therefore it is not guaranteed.
9 If the AutoCAD drawing is being read by any system other than AutoCAD it should be checked against a hard copy. Hyder cannot accept liability for omissions.
10 All tree species are judged by the surveyor at the time of site visit and should act as a guide only.
11 All tree heights are estimates only.

Key

A	Approximate	UTL	Unable to lift
CL	Cover Level	WM	Water Meter
BL	Bed Level	SV	Stop Valve
BT	BT Inspection Chamber	PO	Post
DPC	Damp Proof Course	MP	Marker Post
E	Eaves Level	BB	Belisha Beacon
Conc	Concrete Construction	BO	Bollard
FFL	Finished Floor Level	BS	Bus Stop
FRL	Flat Roof Level	EP	Electric Pole
IL	Invert Level	LB	Litter Bin
PL	Parapet Level	LP	Lamp Post
R	Ridge Level	PB	Post Box
SSL	Structural Slab Level	PM	Parking Meter
WL	Water Level	RS	Road Sign
CATV	Cable TV Inspection Chamber	STN	Survey Station
FH	Fire Hydrant	Tar	Tarmac Pavement
GV	Gas Valve	Tmac	Tarmac construction
G	Gully	TCB	Telephone Call Box
IC	Inspection Chamber	TL	Traffic Light
KO	Kerb Outlet	THL	Threshold Level
RE	Rodding Eye	TP	Telegraph Pole
SL	Soffit Level	BP	Block Paving Construction
		Grass	Grass or Turf construction

Stations Schedule

Station	Easting	Northing	Level	Notes
HY01	385920.918	269808.454	50.105	PEG
HY02	385948.529	269893.440	47.964	PEG

Borehole Schedule

Point	Easting	Northing	Level
BH26	385853.977	269817.776	50.092
BH25	385961.832	269806.630	47.332
BH22	386005.018	269798.922	48.244
BH23	385914.345	269819.167	47.719
BH24	386031.028	269915.317	47.996
BH21	385913.920	269856.206	48.829
BH20	385951.852	269956.387	47.790

Issue	Description	Anc	Apr	Date

Status

Scales

Original Size A1

Height Datum

Grid

Current Issue Signatures

Author K CLARK	12/02/10
Checker K CLARK	12/02/10
Approver D J Roberts	12/02/10

© Copyright reserved

Filename

Client

SEVERN WASTE SERVICES

Hyder Consulting Ltd

Hyder

Medawar Road
The Surrey Research Park
Guildford
GU2 7AR

Project

HARTLEBURY
LAND OFF OAK DRIVE
HARTLEBURY TRADING ESTATE

Title

BOREHOLE SURVEY
SURVEY

Drawing No.	Project No	Issue
0010	001323	01

Appendix B

Borehole and Trial pit Logs
SPT Summary Table
Shear Vane Table
In-situ Permeability Testing

Hyder Consulting — Hyder Consulting Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH20
Job No	Date	Ground Level (m)	Co-Ordinates ()	
LN01323	15-02-10 16-02-10	47.79	E 385,957.0 N 269,904.4	
Contractor				Sheet
CJ Associates				1 of 3

RUN DETAILS						STRATA				
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION: Discontinuities	DESCRIPTION: Details	DESCRIPTION: Main	Geology	Instrument/ Backfill
			46.59		(0.20) 0.20			Loose black sty gravely SAND Gravel comprises fine coal fragments and occasional blue gravel (MADE GROUND)		
		(7)	45.79		(0.80) 2.00			Soft reddish sty very gravelly CLAY Gravel comprises metal fragments, brick and flint (MADE GROUND)		
			45.29		(0.50) 2.50			Soft brown mottled grey sty CLAY (SUPERFICIAL DEPOSIT)		
		(37)	43.79		(0.50) 4.00			Stiff red mottled grey sty CLAY (IVb)		
			43.29		(0.50) 4.50			Stiff grey mottled red sty CLAY (IVa)		
		(>50)	4.29		(2.00) 6.50			Recovered as red clayey gravel Gravel comprises stiff fissured CLAY (III)		
		(>50)	39.79		(0.50) 8.00			Firm to stiff red CLAY (III) Becoming grey with depth		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns	
					63						Window sampled to 8.5mbg Rotary cored between 8.5-60mbg Window sampled between 6.0-8.5mbg Rotary cored between 8.5-20mbg

Additional dimensions in metres Scale :50	Client Mercia Waste Management	Method/ Plant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS3_1.GDT 23/3/10

Hyder Consulting — Hyder Consulting Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH20
Job No	Date	Ground Level (m)	Co-Ordinates ()	
LN01323	15-02-10 16-02-10	47.79	E 385,957.0 N 269,904.4	
Contractor				Sheet
CJ Associates				2 of 3

RUN DETAILS						STRATA				
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION Discontinuities	Detail	Main	Geology	Instrument/ Backfill
8.50								Very weak red MUDSTONE with close to very closely spaced horizontal planar fractures (weathered MERCIA MUDSTONE) (III)		
5-02 0.00	86 (76) 56		37.79		(2.00) 0.00					
5-02 5.50	93 (46) 40	(>50)	36.29		(1.50) 5.50			Very weak red mottled grey MUDSTONE with medium to close to very closely spaced fractures (weathered MERCIA MUDSTONE) (III)		
5-02 3.00	60 (33) 33	(>50)	35.29		(2.00) 2.50			Recovered as coarse grey angular GRAVEL of weak mudstone (III)		
			34.79		(0.50) 3.00			Very weak MUDSTONE with very close to very closely spaced horizontal fractures (weathered MERCIA MUDSTONE) (III)		
5-02 4.50	80 (33) 26	(>50)	34.39 33.29		(0.40) 3.40 (1.10) 4.50			Red GRAVEL. Gravel comprises weak angular MUDSTONE (weathered MERCIA MUDSTONE) (III) Soft very gravelly CLAY (weathered MERCIA MUDSTONE) (III)		
5-02 6.00	80 (13) 3	(>50) (0)	33.79		(1.50) 6.00			Red GRAVEL. Gravel comprises weak angular mudstone (weathered MERCIA MUDSTONE) (III)		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns	
											Window sampled to 8.5mbg Rotary cored between 8.5-16.0mbg Window sampled between 6.0-8.5mbg Rotary cored between 8.5-20mbg

Additions on metres Scale :50	Client Mercia Waste Management	Method/ Plant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS.GPJ AGS3_1.GDT 23/3/10

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH20
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	15-02-10 16-02-10	47.79	E 385,957.0 N 269,904.4	
Contractor				Sheet
CJ Associates				3 of 3

RUN DETAILS

STRATA

Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck-ness)	DESCRIPTION: D scont nu t es	Deta	Ma n	Geo ogy	Instrument/ Backf
5-02	50 (0) 0	(37)	29 29		(2 50)			Med m angu ar GRAVEL Grave compr ses moderate y strong mudstone (weathered MERCIA MUDSTONE) (II)		
8 50		(>50)			8 50					
5-02	67 (20) 3		29 09		8 70			Weak f ne gra ned red MUDSTONE w th c ose y spaced hor zonta fractures (weathered MERCIA MUDSTONE) (II)		
			28 79		9 00			Core recovered as grave of weak MUDSTONE n p aces		
					(00)			Weak f ne gra ned red MUDSTONE w th c ose y spaced hor zonta fractures (MERCIA MUDSTONE) (II)		
20 00		(>50)	27 79		20 00			Weak to moderat y strong red MUDSTONE w th very c ose y spaced sub angu ar fractures and c ose y spaced bands of gypsum (MERCIA MUDSTONE) (I)		

Drilling Progress and Water Observations

Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Water Stand ng
5-02- 0	00 00	20 00	7 00			

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

W ndow samp ed to 8 5mbg
Rotary cored between 8 5- 6 0mbg
W ndow samp ed between 6 0- 8 5mbg
Rotary cored between 8 5-20mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting — Hyder Consulting Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH21
Job No: LN01323	Date: 11-02-10 / 12-02-10	Ground Level (m): 48.43	Co-Ordinates (): E 385,913.8 N 269,856.3	
Contractor: CJ Associates				Sheet: 1 of 3

RUN DETAILS			STRATA						
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION: Discontinuities	DESCRIPTION: Details	DESCRIPTION: Main	Geology	Instrument/ Backfill
					(20)			Loose black slightly gravelly SAND Gravel comprises fine coal fragments and occasional blue gravel (MADE GROUND)		
		(2)	47 23		20					
					(0 80)			Loose black slightly gravelly SAND Gravel comprises fine coal fragments of coal (MADE GROUND) - Fly Ash		
			46 43		2 00					
		(4)			(20)			Firm to stiff grey mottled brown CLAY (SUPERFICIAL DEPOSITS)		
			45 23		3 20					
		(33)	45 03		3 40			Coarse GRAVEL Gravel comprises sandstone (SUPERFICIAL DEPOSITS)		
					(0 80)			Stiff red slightly gravelly CLAY Gravel comprises weak mudstone (IVb)		
			44 23		4 20					
			43 93		4 50			Stiff red mottled grey slightly CLAY (IVa)		
					(0 60)			Stiff red CLAY (III)		
		(>50)	43 33		5 0					
					(2 30)			Stiff grey slightly CLAY (III)		
7 00										
-02		(>50)	4 03		7 40					
	66 (26) 20				(0 60)			Stiff red mottled grey slightly gravelly CLAY Gravel comprises weak red mudstone (III)		
			40 43		8 00					

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing
					2 47	

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

Window sampled to 7 0mbg
Rotary cored between 7-20mbg

Additional dimensions in metres: Scale :50	Client: Mercia Waste Management	Method/ Plant Used: Comacchio Rig	Logged By: CG

AGS3 UK DH BOREHOLE LOGS.GPJ AGS3_1.GD 23/3/10

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH21
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	11-02-10 12-02-10	48.43	E 385,913.8 N 269,856.3	
Contractor				Sheet
CJ Associates				2 of 3

RUN DETAILS

Depth Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck- ness)
8 50			39 93		(0 50) 8 50
-02 0 00	73 (40) 33	(>50)	38 43		(50) 0 00
-02 50	86 (20) 66	(>50)			
-02 3 00	60 (47) 26	(>50)			(5 30)
-02 4 50	66 (40) 20	(>50)			
-02 6 00	67 (47) 40	(>50)	33 3 32 43		5 30 (0 70) 6 00

STRATA DESCRIPTION

D scont nu t es	Deta	Ma n .	Geo ogy	Instrument/ Backf
		Ve y weak red th n y am nated MUDSTONE (III)		
		Weak red MUDSTONE w th c ose y spaced rough fractures (weathered MERCIA MUDSTONE) (III)		
		Weak red MUDSTONE w th c ose y spaced hor zonta p anar fractures (III) Grave band of 00mm at 0 9m Grey s tstone band at 0 6m		
		Weak to moderat y strong grey MUDSTONE (MERCIA MUDSTONE) (II)		

Drilling Progress and Water Observations

Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Water Stand ng

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

W ndow samp ed to 7 0mbg
Rotary cored between 7-20mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS 3_1 GD 23/3/10

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH21
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	11-02-10 12-02-10	48.43	E 385,913.8 N 269,856.3	
Contractor				Sheet
CJ Associates				3 of 3

RUN DETAILS

Depth Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck-ness)
-02	67 (20) 7	(>50)			(50)
7 50			30 93		7 50
-02	00 (67) 53	(>50)	30 43		(0 50) 8 00
9 00					(30)
-02	00 (80) 60	(>50)	29 3		9 30
20 00			28 43		(0 70) 20 00
		(>50)			

STRATA DESCRIPTION

D scont nu t es	Deta	Ma n	Geo ogy	Instrument/ Backf
		Occas ona red band ng w th n mudstone of approm mate y 50mm w dth At 5 85 - 6m band of gypsum No recovery		
		Recoverd as oose coarse GRAVEL Grave s strong angu ar mudstone (weathered MERCIA MUDSTONE) (II)		
		Strong red MUDSTONE w th c ose y spced hor znota and subhor zonta fractures and c ose y spaced bands of gypsum (MERCIA MUDSTONE) (I)		
		Strong red MUDSTONE w th c ose y spaced p anar fractures and bands of gypsum (MERCIA MUDSTONE) (I)		

Drilling Progress and Water Observations

Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Water Stand ng
-02- 0	00 00	20 00	8 00			

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

W ndow samp ed to 7 0mbg
Rotary cored between 7-20mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH22
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 10-02-10	47.98	E 386,000.1 N 269,796.8	
Contractor				Sheet 1 of 3
CJ Associates				

RUN DETAILS						STRATA				
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck- ness)	DESCRIPTION D scont nu t es	Deta	Ma n	Geo ogy	Instrument/ Backf
			47 8		(0 80) 0 80			Loose brown s ty grave y c ayey SAND (MADE GROUND)		
		(8)	46 78		(0 40) 20			Loose c ayey GRAVEL Grave s med um of f nt (MADE GROUND)		
			46 28		(0 50) 70			Soft brown s ty grave y CLAY Grave compr ses br ck and f nt (MADE GROUND)		
		(9)	45 78		(0 50) 2 20			Soft grey mott ed brown CLAY (SUPERFICIAL DEPOSITS)		
					(0 80)			Soft grey mott ed brown CLAY (SUPERFICIAL DEPOSITS)		
		(8)	44 98		3 00			Soft s ty red CLAY (IVb) Becom ng c umb y w th depth		
		(39)	43 88		(0) 4 0			F rm to st ff sandy grave y CLAY (IVa) Crumb y/f ss e n texture		
		(45)	4 48		(2 40) 6 50			Ve y st ff grave y CLAY (III)		
		(39)	40 8		(30) 7 80					

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Stand ng	From	To	Type	Returns	W ndow samp ed from 0-8mbg Rotary cored between 8 5-20 0mbg Stand ng water s at 2 39mbg
					2 39						

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS3 1 GD 23/3/10

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH22
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 10-02-10	47.98	E 386,000.1 N 269,796.8	
Contractor				Sheet
CJ Associates				2 of 3

RUN DETAILS						STRATA				
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck- ness)	DESCRIPTION D scont nu t es	Deta	Ma n	Geo ogy	Instrument/ Backf
		(>50)			(0 70)			Recovered as oose red s ty GRAVEL (weathered MERCIA MUDSTONE) (III) *(continued)*		
			39 48		8 50			Ve y weak red MUDSTONE - recovered as grave (weathered MERCIA MUDSTONE) (III)		
					(2 00)					
		(>50)	37 48		0 50			Weak red f ne gra ned MUDSTONE Fractures c ose y spaced and occas ona grey bands of mudstone (weathered MERCIA MUDSTONE) (II)		
		(>50)			(4 60)					
		(>50)								
		(>50)	32 88		5 0			Moderate y weak grey mott ed red f ne gra ned MUDSTONE w th c ose y spaced p anar fractures and c ose y spaced bands of gypsum (weathered MERCIA MUDSTONE) (II)		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Stand ng	From	To	Type	Returns	W ndow samp ed from 0-8mbg Rotary cored between 8 5-20 0mbg Stand ng water s at 2 39mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consu t ng Ltd

DRILLHOLE LOG

Project				DRILLHOLE No
EnviRecover				BH22
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 10-02-10	47.98	E 386,000.1 N 269,796.8	
Contractor				Sheet
CJ Associates				3 of 3

RUN DETAILS						STRATA				
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spac ng	Red'cd Leve	Legend	Depth (Th ck- ness)	DESCRIPTION D scont nu t es	Deta	Ma n	Geo ogy	Instrument/ Backf
		(>50)			(2 70)			Moderate y weak grey mott ed red f ne gra ned MUDSTONE w th c ose y spaced p anar fractures and c ose y spaced bands of gypsum (weathered MERCIA MUDSTONE) (II) *(continued)*		
		(>50)	30 8		7 80					
					(2 20)			Moderate y strong f ne gra ned MUDSTONE w th rough c ose y spaced fractures Ve y c ose y spaced gypsum bands of var ous or entat on (MERCIA MUDSTONE) (I)		
		(>50)								
			27 98		20 00					
		(>50)								

Drilling Progress and Water Observations						
Date	T me	Depth	Cas ng	Core D a mm	Water Str ke	Stand ng
09-02- 0	00 00	20 00	8 50			

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

W ndow samp ed from 0-8mbg
Rotary cored between 8 5-20 0mbg
Stand ng water s at 2 39mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used Comacchio Rig	Logged By CG

AGS3 UK DH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting

Hyder Consu t ng Ltd

BOREHOLE LOG

Project				BOREHOLE No
EnviRecover				BH23
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 09-02-10	47.71	E 385,914.3 N 269,899.8	
Contractor				Sheet
CJ Associates				1 of 1

SAMPLES & TESTS			Water	STRATA				Geo ogy	Instrument/ Backf
Depth	Type No	Test Resu t		Reduced Leve	Legend	Depth (Th ck-ness)	DESCRIPTION		
				47 2		(0 50) 0 50	Loose b ack grave y SAND Grave s f ne to med um of p aty angu ar mater a (MADE GROUND)		
				46 8		0 90	Soft grey s gh ty sandy s ty grave y CLAY Grave compr ses we rounded gneous rock and sandstone (MADE GROUND)		
				46 5		20	F rm red/mott ed grey CLAY (MADE GROUND)		
20		N22				(80)	F rm s ght y sandy CLAY (IVb)		
				44 7		3 00			
3 00		N42				(00)	F rm grey s ght y s ty CLAY (IVb)		
				43 7		4 00			
4 00		N46				(00)	St ff red mott ed grey CLAY (IVb) Wet, soft - poss b e water seepage		
				42 7		5 00			
5 00		N32				(50)	St ff red CLAY (III)		
				4 2		6 50			
6 50		N50				(25)	Moderate y weak red f ne gra ned MUDSTONE (MERCIA MUDSTONE) (III)		
				39 96		7 75			
7 75		N50							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	T me	Depth	Cas ng Depth	Cas ng D a mm	Water Dpt	From	To	Hours	From	To	
											Poss b e water seepage at 4mbg noted dur ng dr ng Stand ng water at 0 95mbg

A d mens ons n metres Sca e :62 5	C ent Mercia Waste Management	Method/ P ant Used Cable Percussive Rig	Logged By CG

AGS3 UK BH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting — Hyder Consulting Ltd

BOREHOLE LOG

Project				BOREHOLE No
EnviRecover				BH24
Job No: LN01323	Date: 09-02-10 / 10-02-10	Ground Level (m): 47.99	Co-Ordinates: E 386,031.0 N 269,915.3	
Contractor: CJ Associates				Sheet: 1 of 1

SAMPLES & TESTS			Water	STRATA					
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/ Backfill
			▼	46.99		(0.00) 0.00	Soft red mottled black CLAY with rootlets (MADE GROUND)		
2.0		N 9		45.99		(0.00) 2.00	Soft red CLAY (IVb)		
				44.99		(0.00) 3.00	Firm red grey mottled CLAY (IVb)		
3.00		N3		43.99		(0.00) 4.00	Stiff to soft red silty CLAY (IVa)		
				42.99		(0.00) 5.00	Stiff red silty CLAY (III)		
5.00		N38		4.49		(0.50) 6.50	Stiff to firm red silty CLAY (III)		
				39.99		(0.50) 8.00	Moderately weak MERCIA MUDSTONE (II)		
8.00		N50		39.79		8.20	Moderately weak grey MUDSTONE (MERCIA MUDSTONE) (II)		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Diam	Water Dpt	From	To	Hours	From	To	Standing water at 0.89mbg

Dimensions in metres Scale :62.5	Client: Mercia Waste Management	Method/ Plant Used: Cable Percussive Rig	Logged By: CG

AGS3 UK BH BOREHOLE LOGS.GPJ AGS 3 1 GD 23/3/10

Hyder Consulting

Hyder Consu t ng Ltd

BOREHOLE LOG

Project				BOREHOLE No
EnviRecover				BH25
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	10-02-10 10-02-10	47.12	E 385,961.8 N 269,806.4	
Contractor				Sheet
CJ Associates				1 of 1

SAMPLES & TESTS			Water	STRATA					
Depth	Type No	Test Resu t		Reduced Leve	Legend	Depth (Th ck-ness)	DESCRIPTION	Geo ogy	Instrument/ Backf
				46 2		(00) 00	Soft red mott ed grey CLAY (Reworked C ay)		
20		N 0		45 2		(00) 2 00	Soft brown mott ed grey s ty CLAY (SUPERFICIAL DEPOSITS)		
				44 2		(00) 3 00	St ff red mott ed grey s ty CLAY (weathered MERCIA MUDSTONE) (IVa)		
3 00		N40		43 2		(00) 4 00	St ff red s ght y sandy CLAY (weathered MERCIA MUDSTONE) (IVa)		
				42 2		(00) 5 00	St ff red CLAY (weathered MERCIA MUDSTONE) (III)		
5 00		N50		40 62		(50) 6 50	St ff red s ght y mott ed grey sandy CLAY (weathered MERCIA MUDSTONE) (III)		
6 50		N50				(70) 8 20	Recovered as st ff to f rm red sandy CLAY (weathered MERCIA MUDSTONE) (III)		
8 00		N>50		38 92					

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	T me	Depth	Cas ng Depth	Cas ng D a mm	Water Dpt	From	To	Hours	From	To	Stand ng water at 5mbg

A d mens ons n metres Sca e :62 5	C ent Mercia Waste Management	Method/ P ant Used Cable Percussive Rig	Logged By CG

AGS3 UK BH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting

Hyder Consu t ng Ltd

BOREHOLE LOG

Project				BOREHOLE No
EnviRecover				BH26
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	04-02-10 08-02-10	50.04	E 385,858.0 N 269,817.7	
Contractor				Sheet
CJ Associates				1 of 1

SAMPLES & TESTS			Water	STRATA					
Depth	Type No	Test Resu t		Reduced Leve	Legend	Depth (Th ck-ness)	DESCRIPTION	Geo ogy	Instrument/ Backf
				49 04		(00) 00	Soft to f rm red/brown s ght y s ty s ght y grave y CLAY Grave compr ses of sandstone, f nt, sma amount of br ck and some root ets (MADE GROUND)		
20		N4		48 04		(00) 2 00	F rm red/brown s ght y grave y s ght y sandy CLAY Grave compr ses coa , f nt, occas ona br ck and sandstone (MADE GROUND)		
				47 04		(00) 3 00	F rm red mott ed b ack/grey s ght y s ty s ght y grave y CLAY Grave s var ous (SUPERFICIAL DEPOSITS)		
3 00		N4		46 24		(0 80) 3 80	St ff CLAY w th occas ona grave of f nt (SUPERFICIAL DEPOSITS)		
				46 04		4 00	St ff grey/green mott ed red CLAY (IVa)		
				45 34		(0 70) 4 70	St ff red mott ed grey/green CLAY (III)		
5 00		N28				(2 00)	St ff (f ss e crumb y) red CLAY (III)		
6 50		N40		43 34		6 70			
				42 79		(0 55) 7 25	St ff (crumb y/f ss e) red CLAY (III)		
				42 54		7 50	H gh y weathered red MERCIA MUDSTONE (III)		
				42 4		7 90	H gh y weathered grey MERCIA MUDSTONE (III)		
7 90		N>50		4 84		8 20	H gh y weathered red MERCIA MUDSTONE (III)		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	T me	Depth	Cas ng Depth	Cas ng D a mm	Water Dpt	From	To	Hours	From	To	Stand ng water at 4 0 mbg

A d mens ons n metres Sca e :62 5	C ent Mercia Waste Management	Method/ P ant Used Cable Percussive Rig	Logged By CG

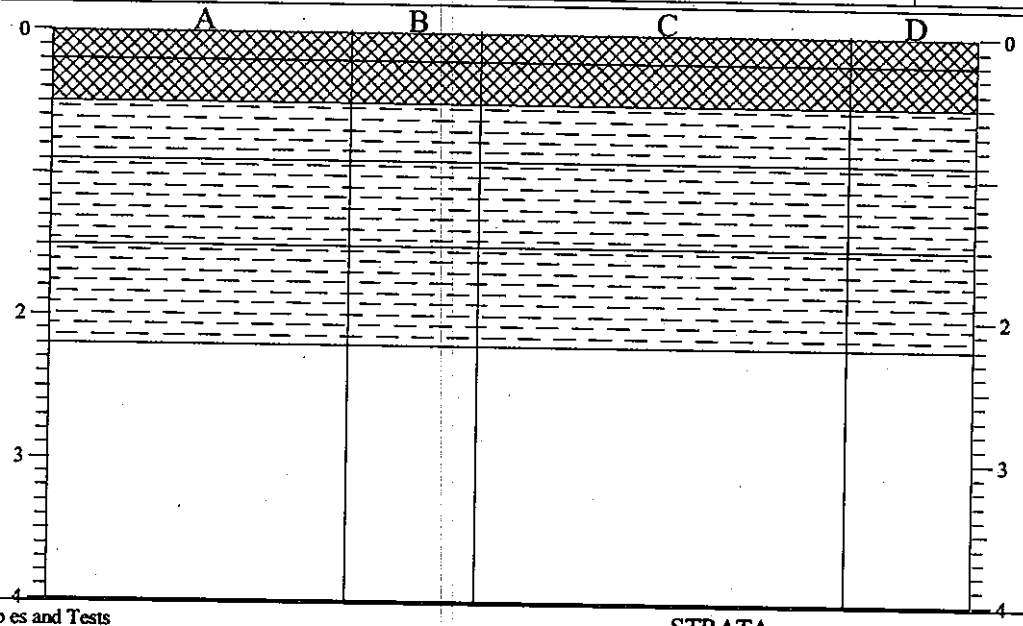
AGS3 UK BH BOREHOLE LOGS GPJ AGS 3 1 GD 23/3/10

Hyder Consulting Ltd

TRIAL PIT LOG

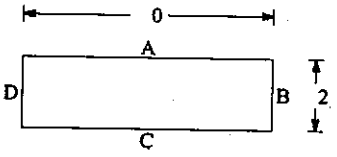
Project				TRIAL PIT No
EnviRecover				TP20
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	47.48	E 385935.9 N 269885.9	
Contractor				Sheet
CJ Associates				1 of 1

Legend



Samp es and Tests					STRATA	
Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION	
				0 2	Soft b ack s ty sandy CLAY (MADE GROUND)	
0 5	ES			0 5	Loose b ack sandy GRAVEL Grave compr ses fragments of coa - f y ash (MADE GROUND)	
				0 9	Soft red CLAY (IVb)	
2	ES			5	Soft to f rm red CLAY (IVb)	
				22	F rm red CLAY (IVb)	

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

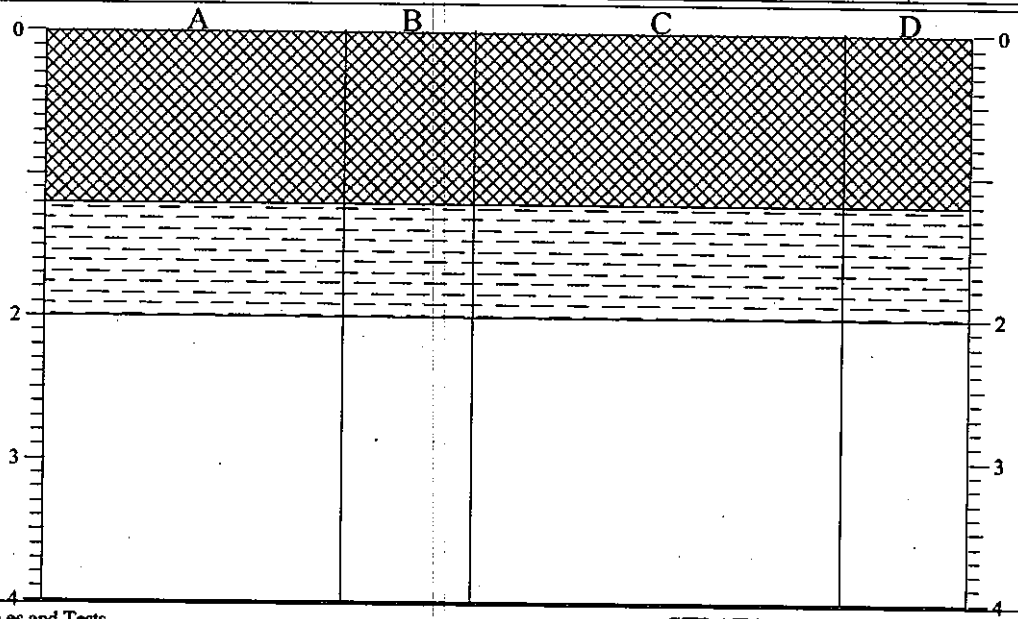
HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.0DT <<Drawing Files>> 23/03/2010 17:03:01

Hyder Consulting Ltd

TRIAL PIT LOG

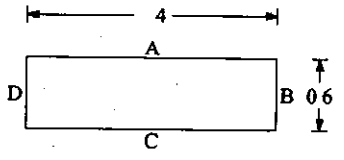
Project				TRIAL PIT No
EnviRecover				TP21
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	47.55	E 386029.6 N 269879.1	
Contractor				Sheet
CJ Associates				1 of 1

Legend



Samp es and Tests					STRATA	
Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION	
0 5	ES				Loose brown/red s ty grave y SAND w th br ck fragments, a arge ba ast and wa sect ons (MADE GROUND)	0
3	ES			2	F rm to st ff soft red CLAY (IVb)	2
				2		3
						4

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

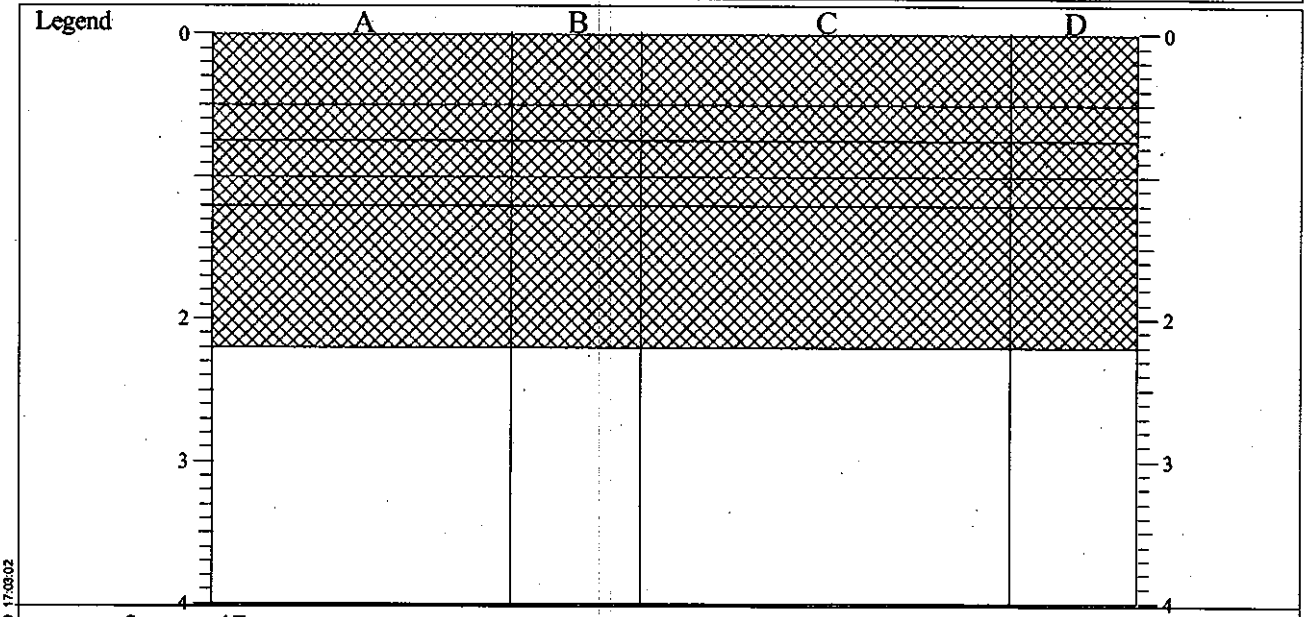
HCL LIBRARY GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<DrawingFile3per>> 23/03/2010 17:03:02

Hyder Consulting Ltd

TRIAL PIT LOG

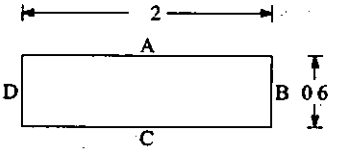
Project				TRIAL PIT No
EnviRecover				TP22
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	48.56	E 385904 N 269857.8	
Contractor				Sheet
CJ Associates				1 of 1

Legend



Samp es and Tests					STRATA	
	Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION
0						
	0 5	ES			0 5	Loose s ty b ack SAND (MADE GROUND)
					0 75	F y ash
	2	ES			2	Soft red/mott ed b ack CLAY (MADE GROUND)
						Soft red CLAY (MADE GROUND)
						Loose b ack s ty SAND (MADE GROUND)
2	2	ES			2 2	F y ash
						Soft brown CLAY (MADE GROUND)
3						
4						

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

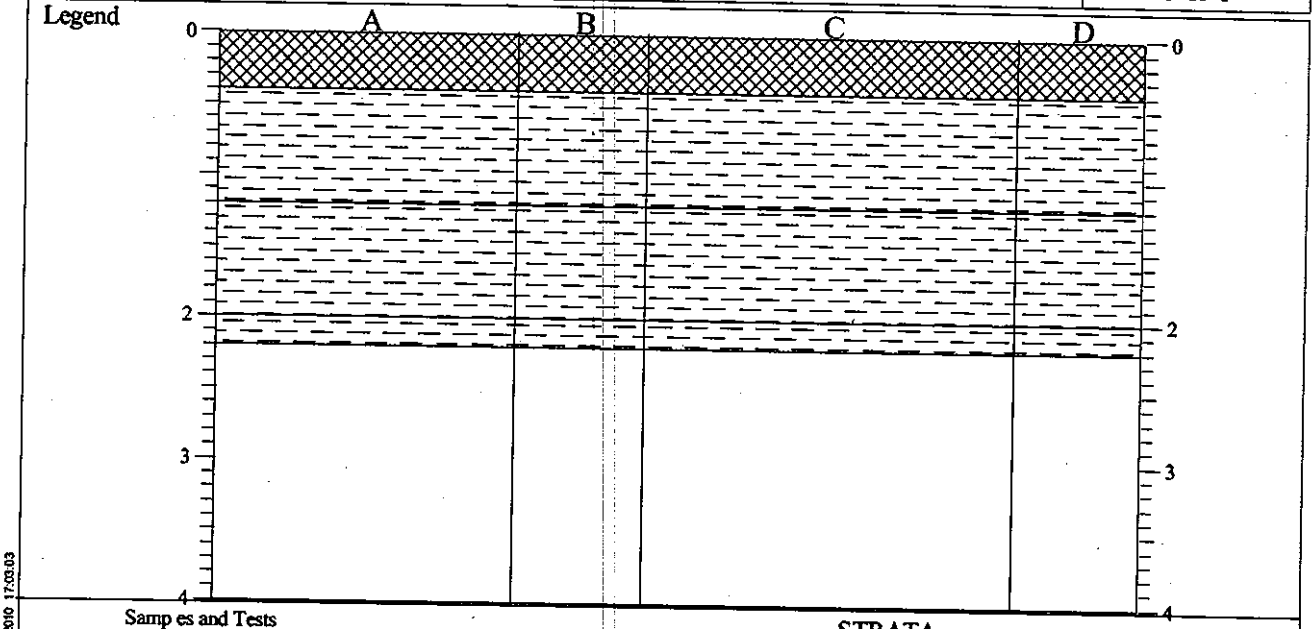
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP23
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	48.27	E 386000.9 N 269826.6	
Contractor				Sheet
CJ Associates				1 of 1

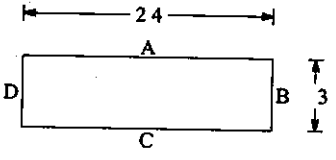
Legend



Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	STRATA DESCRIPTION
0 5	ES			0 4	Loose b ack s ty SAND (MADE GROUND) - f y ash
2	ES			2	Soft red CLAY (IVb)
				2	Soft to f rm red s ght y grey mott ed CLAY (IVb)
				2 2	Soft to f rm grey s ght y red mott ng CLAY (IVb)

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

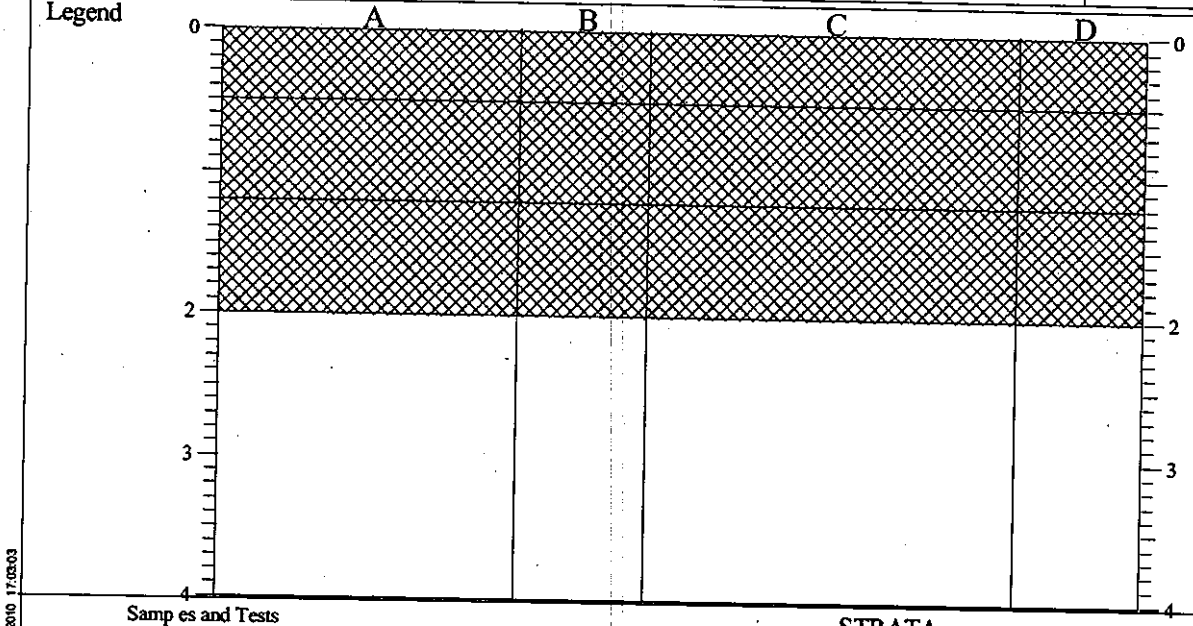
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used13 Tonne tracked excavator	Logged By CG

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP24
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	49.42	E 385929.2 N 269791	
Contractor				Sheet
CJ Associates				1 of 1

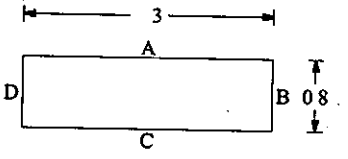
Legend



Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	STRATA DESCRIPTION
0 5	ES			0 5	Soft brown s ty sandy grave y CLAY w th abundant root ets Grave s br ck, pottery, s ag, poss b c asbestos fragments (MADE GROUND)
	ES			2	Soft brown s ty sandy s ght y cobb y grave y CLAY Grave s and cobb es compr se wa sect ons, meta conta ners, stee mesh and ron bars (MADE GROUND)
5	ES			2	F rm to soft s ty sandy grave y CLAY Grave s br ck and scrap meta (MADE GROUND)

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

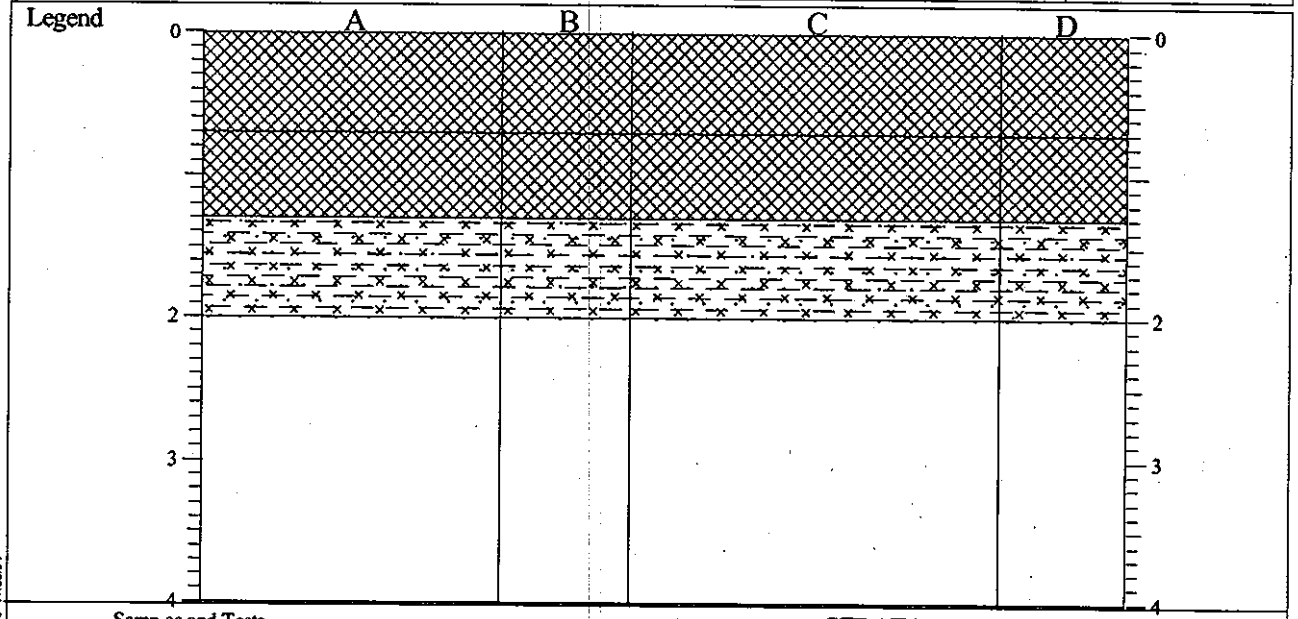
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

Hyder Consulting Ltd

TRIAL PIT LOG

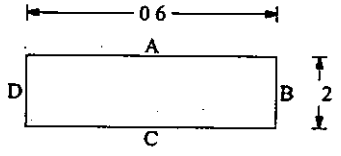
Project				TRIAL PIT No
EnviRecover				TP25
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	47.99	E 385959.8 N 269774.4	
Contractor				Sheet
CJ Associates				1 of 1

Legend



Samp es and Tests					STRATA	
	Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION
0						
	0 5	ES			0 7	F rm to st ff red s ty s ght y sandy CLAY w th root ets (MADE GROUND).
	2	ES			3	Loose dark brown grave y very s ty SAND Grave compr ses br cks (MADE GROUND)
2	2	ES			2	F rm to st ff red mott ed brown s ght y s ty sandy CLAY (IVb)
3						
4						

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

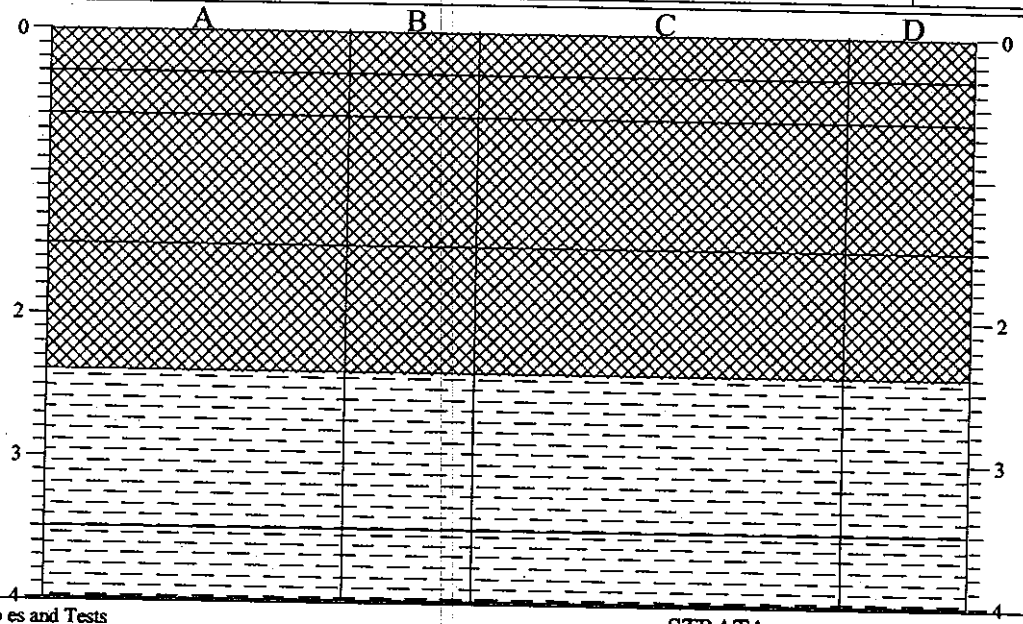
HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\ERID-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<DrawingFileSpec>> 23/03/2010 17:03:04

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP26
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	47.83	E 385969.3 N 269901	
Contractor				Sheet
CJ Associates				1 of 2

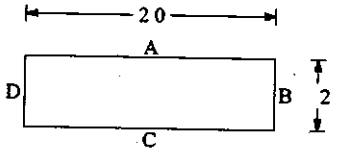
Legend



Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	STRATA DESCRIPTION
				0 3	Soft red s ty sandy CLAY w th some root ets (MADE GROUND)
0 5	ES			0 6	Loose dark b ack grave y SAND Grave compr ses b ue freagments and f ne coa fragments (MADE GROUND)
	ES				- f y ash
				5	Soft grey s ty CLAY (MADE GROUND) (SUPEFICIAL DEPOSITS)
2	B ES				Soft red mott ed grey CLAY (MADE GROUND) (SUPEFICIAL DEPOSITS)
				2 4	
3	B	58			F rm red mott ed grey CLAY (IVb)
				3 5	

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used13 Tonne tracked excavator	Logged By CG

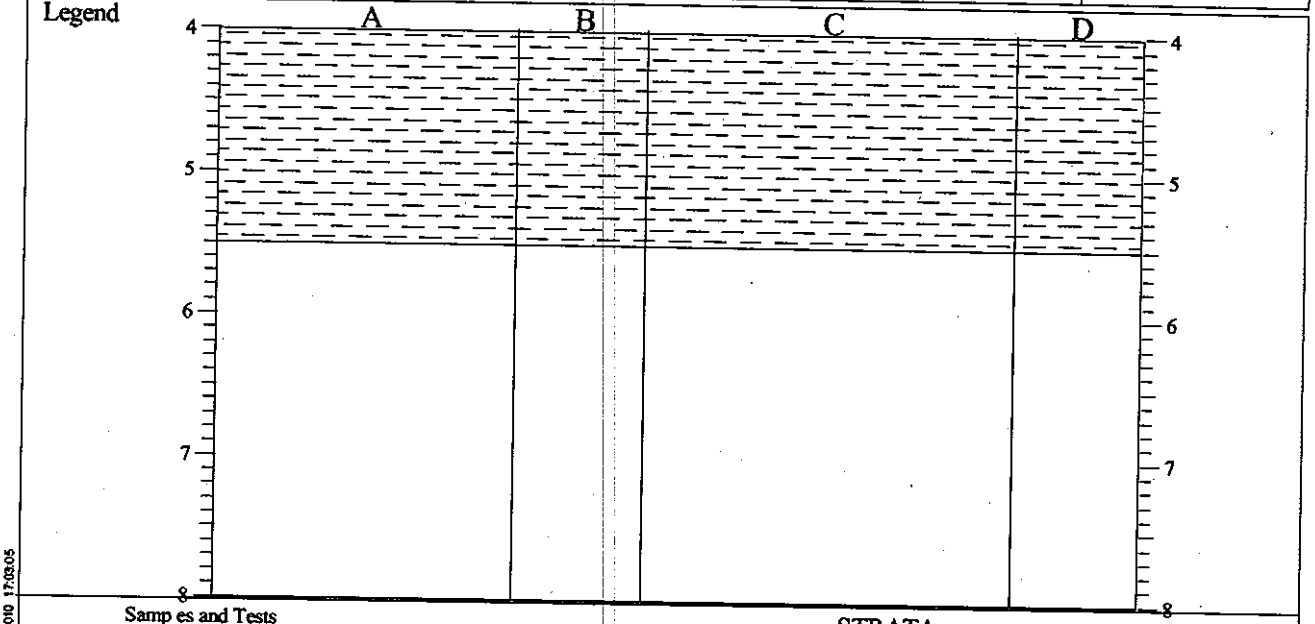
HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.0DT <<DrawingFile$path>> 23/03/2010 17:03:05

Hyder Consulting Ltd

TRIAL PIT LOG

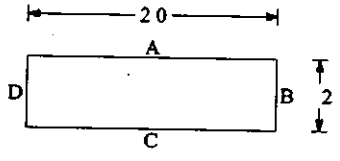
Project				TRIAL PIT No
EnviRecover				TP26
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	47.83	E 385969.3 N 269901	
Contractor				Sheet
CJ Associates				2 of 2

Legend



Samp es and Tests					STRATA	
	Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION
4	4	B				Recovered as red c ayey grave Grave compr ses f rm to st ff red fr ab e CLAY (IVb) Grave fragments < 00mm Grave s ze ncreas ng s ght y w th depth
5	5	B			5 5	
6						
7						
8						

Shoring/Support:
Stability:



GENERAL REMARKS

No groundwater seepage noted

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used13 Tonne tracked excavator	Logged By CG

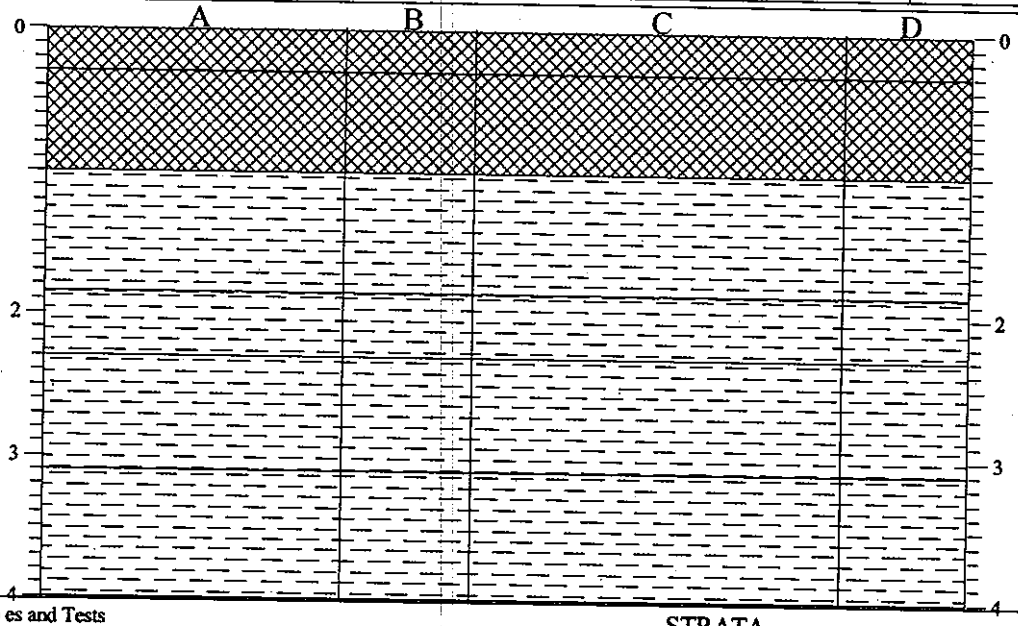
HCLLIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<DrawingFileSpec>> 22/03/2010 17:03:05

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP27
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	48.54	E 385949.4 N 269839.8	
Contractor				Sheet
CJ Associates				1 of 2

Legend



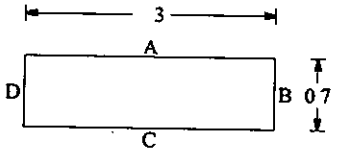
Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater
0 3	ES		
85	B ES	69	
2 5	ES		
3 3	B		
3 5	B		

STRATA

Depth	DESCRIPTION
0 3	Loose b ack coarse grave y SAND (MADE GROUND)
	Soft red mott ed grey s ty CLAY (SUPEFICIAL DEPOSITS)
	Soft to f rm red mott ed grey CLAY (SUPEFICIAL DEPOSITS)
85	
2 3	Soft grey ca careous CLAY (IVb)
	F rm to soft red mott ed grey CLAY w th ca careous nodu es (IVb)
3	
	Recovered as red s ty grave Grave compr ses f rm to st ff red fr ab e CLAY (III)
	Grave fragments < 00mm

Shoring/Support:
Stability:



GENERAL REMARKS

Groundwater seepage noted at 4 7mbg

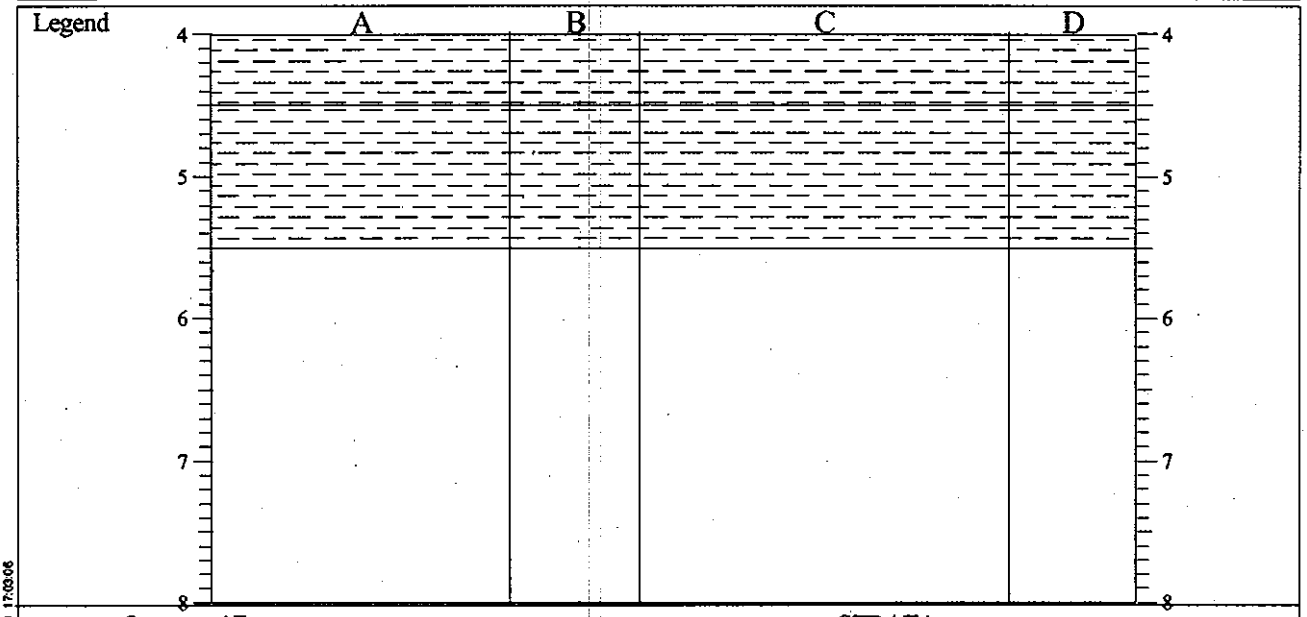
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\0-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<Drawing File Name>> 23/03/2010 17:03:06

Hyder Consulting Ltd

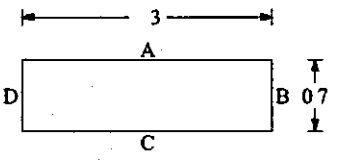
TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP27
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	09-02-10 09-02-10	48.54	E 385949.4 N 269839.8	
Contractor				Sheet
CJ Associates				2 of 2



Samp es and Tests					STRATA	
	Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION
	4	B			4 5	Recovered as red sandy grave Grave compr ses st ff red fr ab e CLAY (III) Grave fragments < 00mm
					5 5	

Shoring/Support:
Stability:



GENERAL REMARKS

Groundwater seepage noted at 4 7mbg

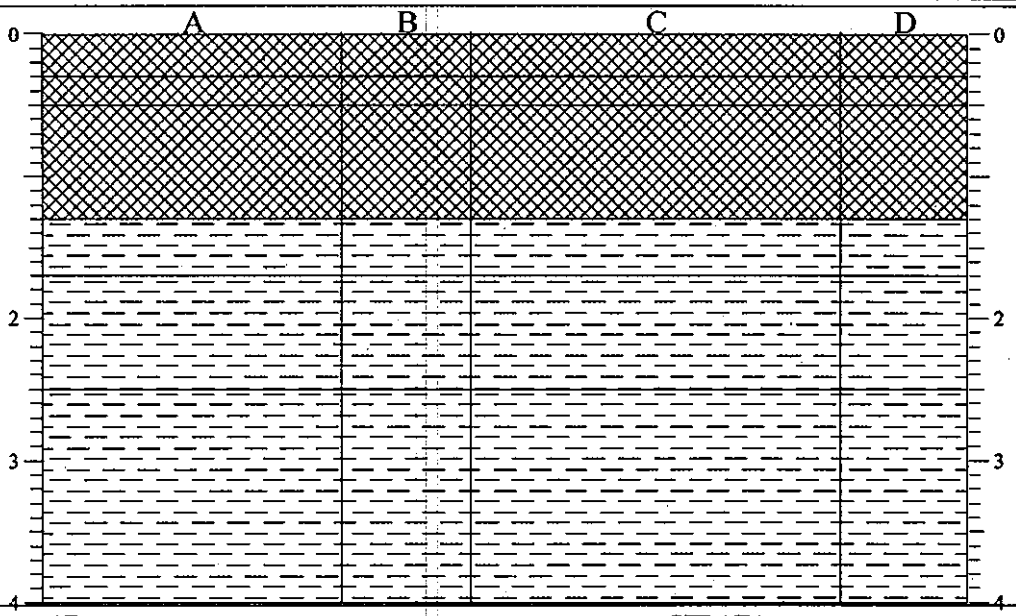
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

Hyder Consulting Ltd

TRIAL PIT LOG

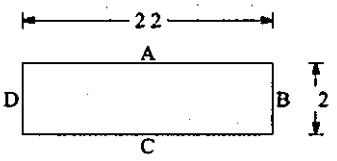
Project				TRIAL PIT No
EnviRecover				TP28
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	47.75	E 385983.6 N 269809.9	
Contractor				Sheet
CJ Associates				1 of 2

Legend



Samp es and Tests					STRATA	
	Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION
0					0 3	Soft to f rm b ack/red s ty s ght y grave y CLAY w th root ets Grave compr ses med um f nt and br ck, poss b e asbestos fragments (MADE GROUND)
	0 5	ES			0 5	Soft red grave y CLAY Grave s med um f nt and br ck (MADE GROUND)
						F rm red CLAY (SUPEFICIAL DEPOSITS)
	2	B ES	77		3	
					7	Soft grey CLAY (SUPEFICIAL DEPOSITS)
2						C ay s speck ed w th ca careous prec p tate
	2	B	68			Soft to f rm red mott ed orange/grey CLAY (IVb)
			57		2 5	
						Recovered as red s ty grave Grave compr ses f rm to st ff red fr ab e CLAY (IVa)
3	2 9	B ES				Grave fragments < 00mm
4						

Shoring/Support:
Stability:



GENERAL REMARKS

Groundwater seepage noted at 2 9mbg

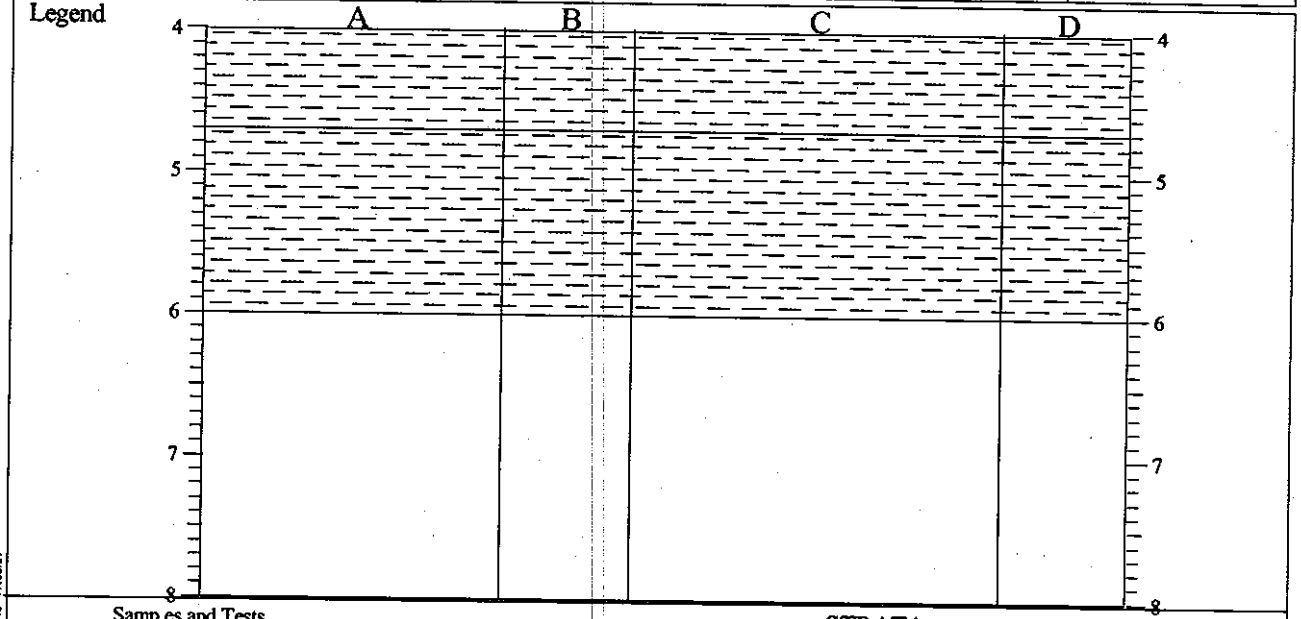
A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP28
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	47.75	E 385983.6 N 269809.9	
Contractor				Sheet
CJ Associates				2 of 2

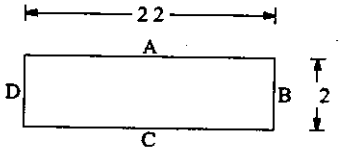
Legend



Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	STRATA DESCRIPTION
3 9	B				
				4 7	
					Recovered as a red c ayey grave Grave compr ses st ff red fr ab e CLAY (III) Grave fragments < 00mm
5 5	B				
				6	

Shoring/Support:
Stability:



GENERAL REMARKS

Groundwater seepage noted at 2 9mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used13 Tonne tracked excavator	Logged By CG

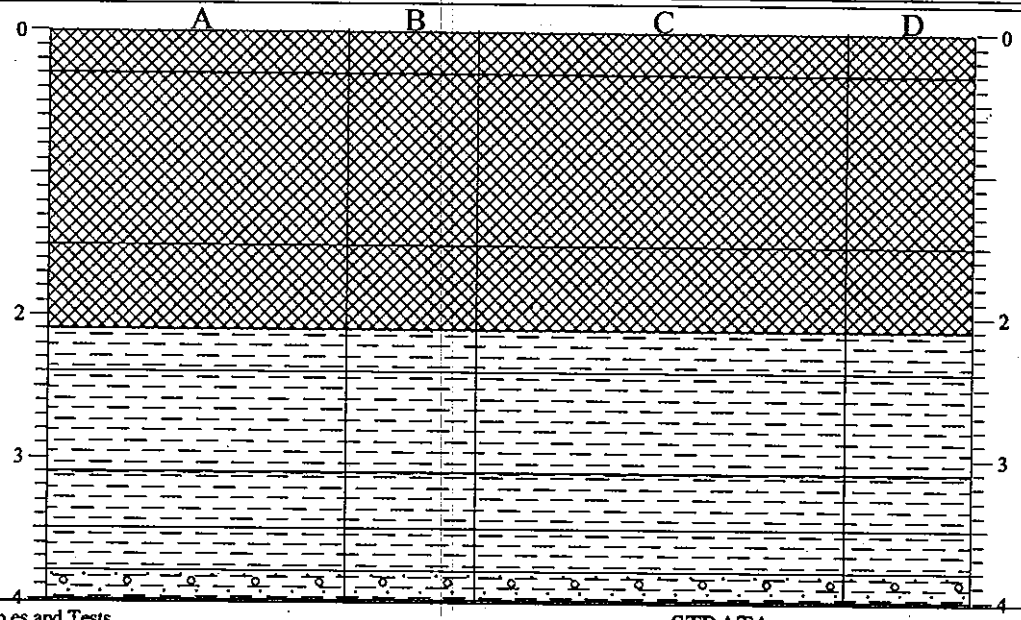
HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<Drawing Files\Spec>> 23/03/2010 17:03:07

Hyder Consulting Ltd

TRIAL PIT LOG

Project				TRIAL PIT No
EnviRecover				TP29
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	48.14	E 385988.8 N 269781.1	
Contractor				Sheet
CJ Associates				1 of 2

Legend



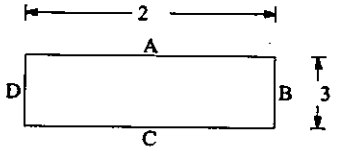
Samp es and Tests

Depth of sample	Sample Type	Shear Vane	Groundwater
0 5	ES		
	B		
	ES		
		39	
		56	
2 9	B	46	
		55	
3 5	B		
		52	

STRATA

Depth	DESCRIPTION
0 3	Loose b ack grave y sandy SILT w th root ets Grave compr ses coa fragments, f nt and mudstone (MADE GROUND)
	F rm red mott ed grey/b ack grave y CLAY Grave s f ne to med um of f nt, mudstone and coa fragments (MADE GROUND)
5	
	F rm red mott ed grey grave y CLAY Grave s coarse of br cks, wood and stee mesh (MADE GROUND)
2	
2 4	Soft to f rm red/grey mott ed CLAY (IVb)
	Soft to f rm grey/mott ed red CLAY (SUPEFICIAL DEPOSITS)
3	C ay s speck ed w th ca careous mater a
3 5	Soft to f rm grey mott ed red CLAY (IVa)
3 8	

Shoring/Support:
Stability:



GENERAL REMARKS

Groundwater seepage noted at 3 9mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

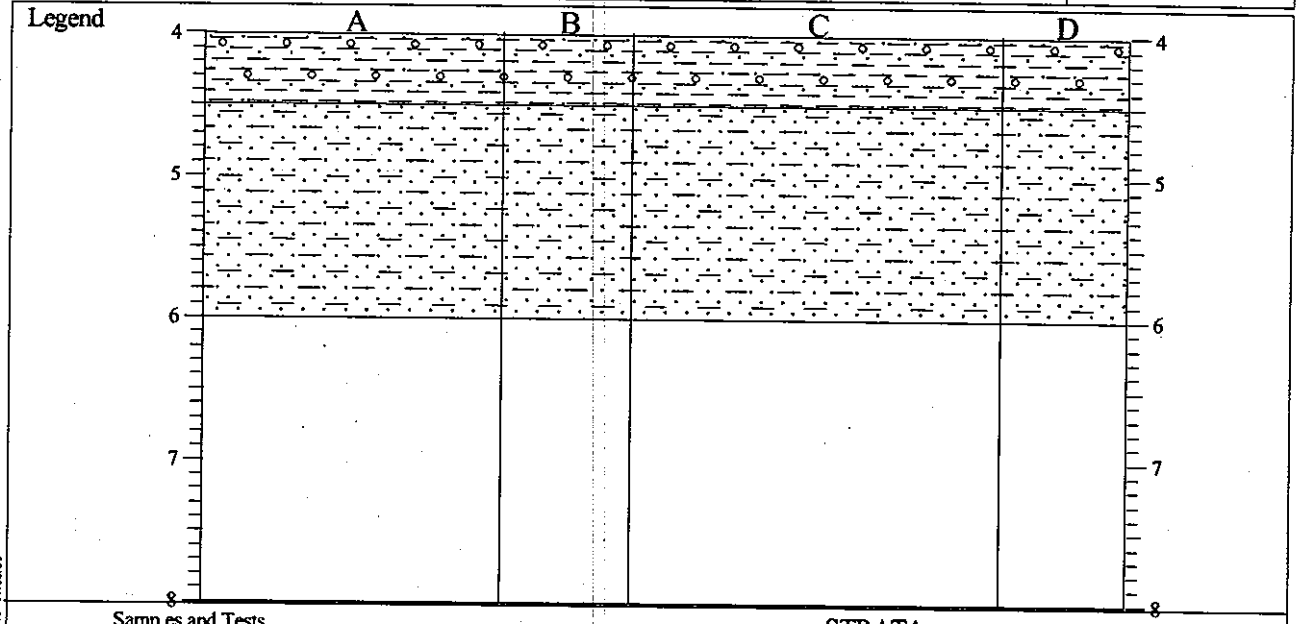
HCL LIBRARY.GLB Log HCL TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\O-CALCS\BOREHOLE LOGS.GRJ AGS 3 1.GDT <<Drawing File$pe>> 29/03/2010 17:03:08

Hyder Consulting Ltd

TRIAL PIT LOG

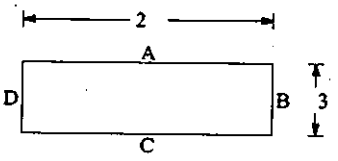
Project				TRIAL PIT No
EnviRecover				TP29
Job No	Date	Ground Leve (m)	Co-Ord nates ()	
LN01323	08-02-10 08-02-10	48.14	E 385988.8 N 269781.1	
Contractor				Sheet
CJ Associates				2 of 2

Legend



Samp es and Tests					STRATA	
Depth of sample	Sample Type	Shear Vane	Groundwater	Depth	DESCRIPTION	
3 9	B			4 5	Recovered as med um red grave Grave compr ses red fr ab e CLAY (IVa) Grave fragments < 00mm	
4 5	B				Soft red s ghtly grave y very sandy CLAY Grave compr ses med um angu ar mudstone (III) Grave fragments < 00mm	
5 5	B			6	Med um dense red very c ayey s ty SAND Grave compr ses med um mudstone (III) Grave fragments < 00mm	

Shoring/Support:
Stability:

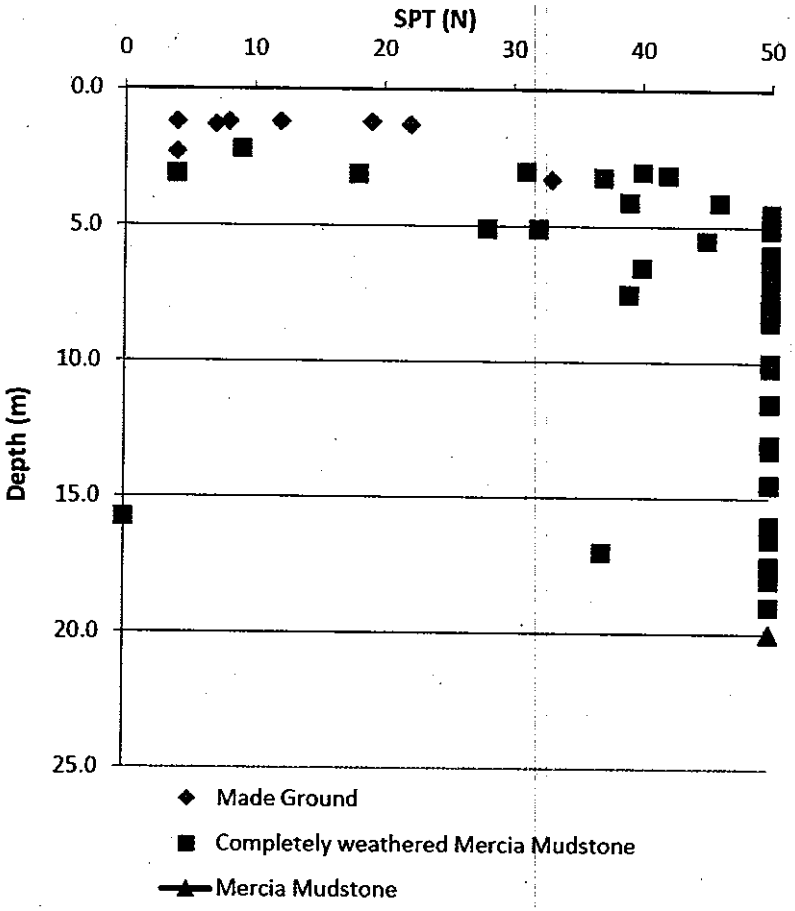


GENERAL REMARKS

Groundwater seepage noted at 3 9mbg

A d mens ons n metres Sca e :50	C ent Mercia Waste Management	Method/ P ant Used 13 Tonne tracked excavator	Logged By CG

HCL LIBRARY.GLB Log HCL_TRIAL PIT LOG K:\PROJECTS\LN01323 ENVIRECOVER\D-CALCS\BOREHOLE LOGS.GPJ AGS 3 1.GDT <<DrawingFileSpec>> 23/02/2010 17:03:09



SPT Summary Profile

Shear Vein Results

Trial Pit	Depth	Shear Vein	Residual
26	3	58	15
27	1.85	69	34
28	1.2	77	
	2	68	
	2.5	57	
29	1.5	39	10
	2	56	22
	2.8	46	15
	3.2	55	22
	3.7	52	20

BH25

Site	EnviRecover
Date	10/02/2010
Type of test	Rising Head Test
Diameter of casing	150mm
Natural groundwater level	1.15mbgl
Height of casing above ground level	0.44m
Depth below ground level to bottom of borehole	5.44m
Depth below ground level to bottom of casing	2.560m
Permeability K (ms^{-1})	3.64203E-07

N.B. Depth to water level during test to be measured from top of casing

Elapsed Time (mins)	Depth to water level (m)
0	8.2
0.5	8.135
1	7.915
1.5	7.865
2	7.745
3	7.765
4	7.6
5	7.525
7	7.38
10	7.22
15	7.095
20	6.89
30	6.71
45	6.33
60	5.99

BH26

Site	EnviRecover
Date	08/02/2010
Type of test	Rising Head Test
Diameter of casing	150mm
Natural groundwater level	4.01
Height of casing above ground level	0.25m
Depth below ground level to bottom of borehole	9.250m
Depth below ground level to bottom of casing	5.75m
Permeability K (ms^{-1})	4.83625E-07

N.B. Depth to water level during test to be measured from top of casing

Elapsed Time (mins)	Depth to water level (m)
0	9.25
0.5	9.185
1	9.05
1.5	9
2	8.95
3	8.92
4	8.88
5	8.82
7	8.76
10	8.62
15	8.32
20	8.03
30	7.73
45	7.21
60	6.84

Appendix C

Laboratory Test Results

Our Ref: EXR/103458 (Ver. 1)
Your Ref:

February 23, 2010

scientifics

Scientifics Ltd
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

Mr D Thomas
Hyder Consulting Limited
HCL House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

For the attention of Mr D Thomas

Dear Mr Thomas

LEACHATE SAMPLE ANALYSIS - LNO1323

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that from 1 January 2003 our policy for the retention of paper based laboratory records and analysis reports will be 6 years.

The work was carried out in accordance with Scientifics Ltd Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for Scientifics

J Elstub
Project Co-ordinator
01283 554500

TEST REPORT
LEACHATE SAMPLE ANALYSIS

UKAS TESTING
1252

Report No. EXR/103458 (Ver. 1)

Hyder Consulting Limited
HCL House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

Site: LNO1323

The 11 samples described in this report were logged for analysis by Scientifics on 18-Feb-2010.
The analysis was completed by: 23-Feb-2010

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by Scientifics Ltd.

The following tables are contained in this report:

On behalf of
Scientifics :
John Elstub

Project Co-ordinator

Date of Issue: 23-Feb-2010

Tests marked '^' have been subcontracted to another laboratory.

Scientifics Ltd accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :		mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
Method Codes :		KONENS	ICPMSW	ICPMSW	ICPMSW	PAHMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	KONENS	GROHSA	TPHFID-Si		
Method Reporting Limits :		1	0.001	0.001	0 0001	0.01	0.001	0.001	0.002	0.001	0 0001	0.001	0 01	0.1	0.01		
UKAS Accredited :		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no		
Laboratory ID Number EX/	Client Sample Description	Chloride as Cl w	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	PAH MS-SIM (16)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	GRO-HSA (AA)	TPH GC (AA)		
1004926	BH20 0.75	15	0.043	0.005	0 0015	Req	0.013	0.004	0.241	0.003	<0 0001	0.007	<0.01	Req	Req		
1004927	BH23 0.5	20	0.003	0.003	<0.0001	Req	0.028	0.001	0.085	0.005	<0 0001	0.002	1.1	Req	Req		
1004928	TP20 0.5	10	0.004	0.004	0 0001	Req	0.011	0.06	0.042	0.004	<0 0001	0.002	<0.01	Req	Req		
1004929	TP21 0.5	2	0.007	0.003	<0.0001	Req	0.043	0.006	0.223	0.001	<0 0001	<0 001	<0.01	Req	Req		
1004930	TP22 1.2	3	0.002	0.003	<0.0001	Req	0.011	0.003	0.031	0.003	<0 0001	0.002	0 01	Req	Req		
1004931	TP24 0.5	8	0.004	0.101	<0.0001	Req	0.098	<0.001	0.019	0.012	0 0003	0.003	0.2	Req	Req		
1004932	TP25 1.2	2	0.005	0.013	0.0003	Req	0.019	0.058	0.169	0.003	<0 0001	<0 001	<0.01	Req	Req		
1004933	TP26 0.5	4	0.002	0.025	<0.0001	Req	0.003	0.003	0.019	0.002	0 0003	0.006	<0.01	Req	Req		
1004934	TP27 0.3	4	0.002	0.01	<0.0001	Req	0.007	0.001	0.02	0.005	0.001	0.004	0 02	Req	Req		
1004935	TP28 0.5	3	0.005	0.009	0 0001	Req	0.022	0.018	0.195	0.002	<0 0001	<0 001	0 04	Req	Req		
1004936	TP29 0.5	<1	0.002	0.003	<0.0001	Req	0.015	0.004	0.064	<0.001	<0 0001	<0 001	<0.01	Req	Req		

scientifics
Bretby Business Park, Ashby Road
Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Client Name	Hyder Consulting Limited
Contact	Mr D Thomas

LNO1323

Leachate Sample Analysis

Date Printed	23-Feb-10
Report Number	EXR/103458
Table Number	1

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH20 0.75	**Job Number:**	W10_3458
LIMS ID Number:	EX1004926	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.027	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	4.48	0.012	M
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.020	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.08	0.016	M
Pyrene	129-00-0	7.36	0.013	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.198	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	111
Acenaphthene-d10	105
Phenanthrene-d10	108
Chrysene-d12	116
Perylene-d12	122

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	91
Terphenyl-d14	97

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH23 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004927	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.07	0.030	M
Pyrene	129-00-0	7.36	0.036	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.206	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	107
Acenaphthene-d10	102
Phenanthrene-d10	107
Chrysene-d12	117
Perylene-d12	123

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	84
Terphenyl-d14	94

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP20 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004928	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.021	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.022	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.08	0.011	M
Pyrene	129-00-0	7.37	0.013	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.187	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	109
Acenaphthene-d10	107
Phenanthrene-d10	110
Chrysene-d12	120
Perylene-d12	126

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	80
Terphenyl-d14	94

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP21 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004929	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.015	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	4.48	0.016	M
Fluorene	86-73-7	4.86	0.100	M
Phenanthrene	85-01-8	5.72	0.151	60
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.08	0.025	M
Pyrene	129-00-0	7.36	0.056	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	9.11	0.010	M
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.463	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	113
Acenaphthene-d10	112
Phenanthrene-d10	123
Chrysene-d12	147
Perylene-d12	154

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	81
Terphenyl-d14	90

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP22 1.2	**Job Number:**	W10_3458
LIMS ID Number:	EX1004930	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.039	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	4.48	0.026	M
Fluorene	86-73-7	4.86	0.024	M
Phenanthrene	85-01-8	5.72	0.078	M
Anthracene	120-12-7	5.77	0.023	M
Fluoranthene	206-44-0	7.07	0.071	M
Pyrene	129-00-0	7.37	0.059	M
Benzo[a]anthracene	56-55-3	9.06	0.024	M
Chrysene	218-01-9	9.11	0.013	M
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.427	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	116
Acenaphthene-d10	111
Phenanthrene-d10	115
Chrysene-d12	125
Perylene-d12	131

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	84
Terphenyl-d14	90

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP24 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004931	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.014	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.017	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.08	0.011	M
Pyrene	129-00-0	7.37	0.010	M
Benzo[a]anthracene	56-55-3	9.07	0.014	M
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.176	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	112
Acenaphthene-d10	107
Phenanthrene-d10	110
Chrysene-d12	114
Perylene-d12	120

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	80
Terphenyl-d14	90

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP25 1.2	**Job Number:**	W10_3458
LIMS ID Number:	EX1004932	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.016	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.026	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.07	0.022	M
Pyrene	129-00-0	7.36	0.019	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.203	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	108
Acenaphthene-d10	108
Phenanthrene-d10	110
Chrysene-d12	122
Perylene-d12	131

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	76
Terphenyl-d14	96

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP26 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004933	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.010	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.08	0.063	M
Pyrene	129-00-0	7.36	0.059	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.262	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	105
Acenaphthene-d10	104
Phenanthrene-d10	109
Chrysene-d12	123
Perylene-d12	130

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	90
Terphenyl-d14	100

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP27 0.3	**Job Number:**	W10_3458
LIMS ID Number:	EX1004934	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.047	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	4.48	0.024	M
Fluorene	86-73-7	4.87	0.034	M
Phenanthrene	85-01-8	5.72	0.149	60
Anthracene	120-12-7	5.77	0.040	61
Fluoranthene	206-44-0	7.07	0.101	M
Pyrene	129-00-0	7.36	0.073	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	9.11	0.011	M
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.559	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	109
Acenaphthene-d10	105
Phenanthrene-d10	111
Chrysene-d12	125
Perylene-d12	132

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	86
Terphenyl-d14	99

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP28 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004935	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.016	M
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	5.72	0.029	M
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	7.07	0.024	M
Pyrene	129-00-0	7.37	0.020	M
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	9.11	0.011	M
Benzo[b]fluoranthene	205-99-2	10.60	0.013	M
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.213	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	113
Acenaphthene-d10	107
Phenanthrene-d10	111
Chrysene-d12	117
Perylene-d12	127

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	87
Terphenyl-d14	95

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	TP29 0.5	**Job Number:**	W10_3458
LIMS ID Number:	EX1004936	**Date Booked in:**	18-Feb-10
QC Batch Number:	0509	**Date Extracted:**	22-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	22-Feb-10
Directory:	0222PAH.MS4\	**Matrix:**	Leachate
Dilution:	1.4	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.30	0.044	M
Acenaphthylene	208-96-8	4.36	0.017	M
Acenaphthene	83-32-9	4.48	0.061	M
Fluorene	86-73-7	4.86	0.369	85
Phenanthrene	85-01-8	5.72	0.982	82
Anthracene	120-12-7	-	< 0.014	-
Fluoranthene	206-44-0	7.08	0.043	M
Pyrene	129-00-0	7.36	0.134	M
Benzo[a]anthracene	56-55-3	-	< 0.014	-
Chrysene	218-01-9	-	< 0.014	-
Benzo[b]fluoranthene	205-99-2	-	< 0.014	-
Benzo[k]fluoranthene	207-08-9	-	< 0.014	-
Benzo[a]pyrene	50-32-8	-	< 0.014	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.014	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.014	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.014	-
Total (USEPA16) PAHs	-	-	< 1.776	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	109
Acenaphthene-d10	105
Phenanthrene-d10	108
Chrysene-d12	122
Perylene-d12	126

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	89
Terphenyl-d14	99

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Gasoline Range Organics
(BTEX and Aliphatic Carbon Ranges)

Customer and Site Details: Hyder Consulting Limited : LNO1323
Job Number: W10_3458
Directory: D:\TES\DATA\Y2010\0222HSA_GC12\022210 2010-02-22 16-13-00\029F2101.D
Method: Headspace GCFID

Matrix: LEACHATE
Date Booked in: 18-Feb-10
Date extracted: 22-Feb-10
Date Analysed: 22-Feb-10, 23:0

*** Sample data with an asterisk are not UKAS accredited.**

		Concentration, (mg/l)					Aliphatics				
Sample ID	Client ID	Benzene	Toluene	Ethyl benzene	m/p-Xylene	o-Xylene	C5 - C6	>C6 - C7	>C7 - C8	>C8 - C10	Total GRO
* EX1004926	BH20 0.75	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004927	BH23 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004928	TP20 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004929	TP21 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004930	TP22 1.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004931	TP24 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004932	TP25 1.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004933	TP26 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004934	TP27 0.3	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004935	TP28 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
* EX1004936	TP29 0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1

Note: Benzene elutes between C6 and C7, toluene elutes between C7 and C8, ethyl benzene and the xylenes elute between C8 and C9.
Xylenes have been deducted from the C8-C10 band to give the aliphatic fraction, however aromatic compounds may still be contributing to this fraction.

Where individual results are flagged see report notes for status.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details: Hyder Consulting Limited : LNO1323
Job Number: W10_3458
QC Batch Number: 100509
Directory: D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\066B1901.D
Method: Separating Funnel

Separation: Silica gel
Eluents: Hexane, DCM

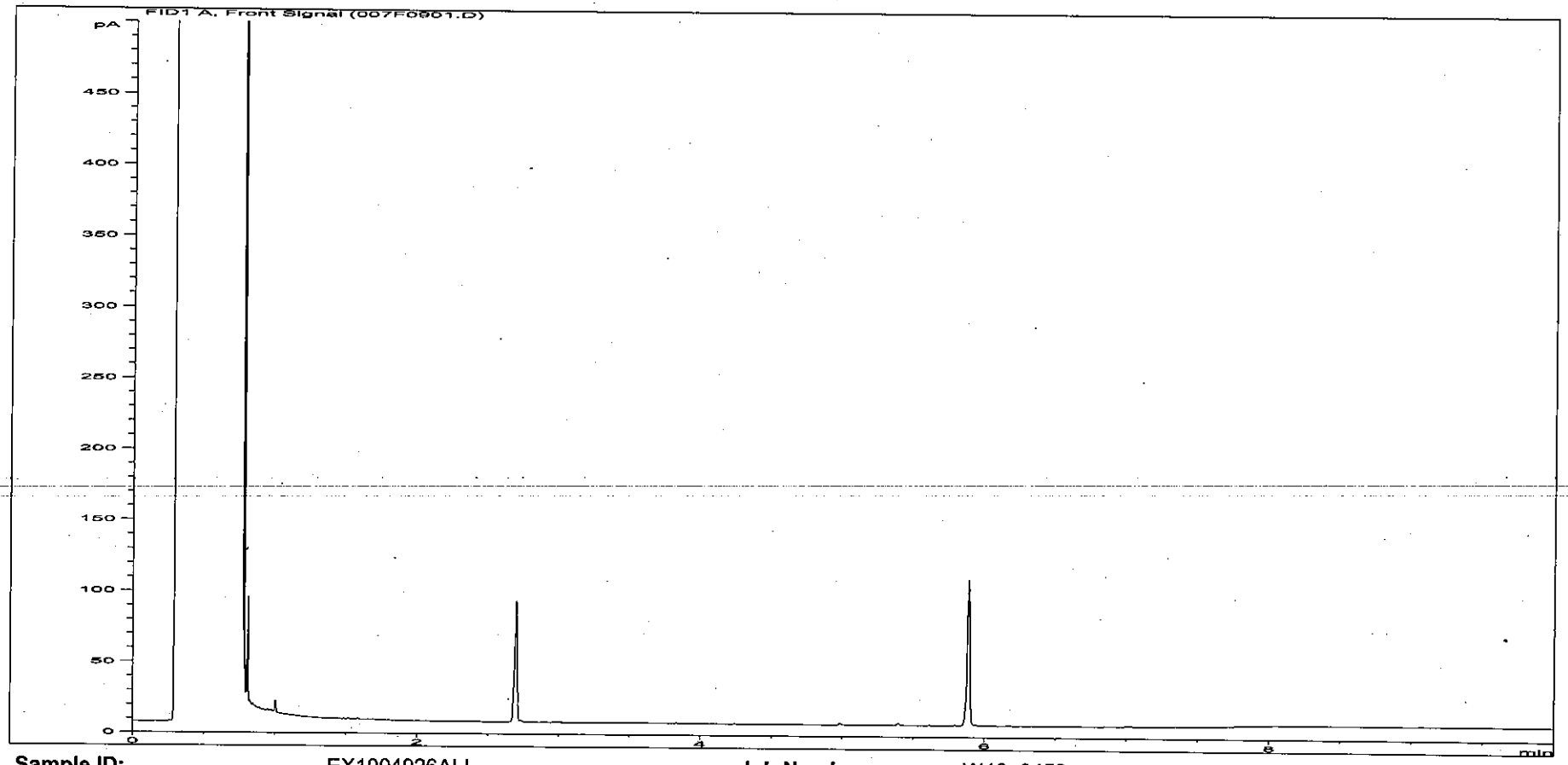
Matrix: Leachate
Date Booked ir 18-Feb-10
Date Extracted 22-Feb-10
Date Analysed 23-Feb-10, 15:05:12

* This sample data is not UKAS accredited.

		Concentration, (mg/l)											
		>C8 - C10		>C10 - C12		>C12 - C16		>C16 - C21		>C21 - C35		>C8 - C40	
Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
EX1004926	BH20 0.75	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
EX1004927	BH23 0.5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004928	TP20 0 5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004929	TP21 0 5	<0 01	<0.01	<0.01	<0.01	0.013	<0.01	0.079	0.034	0.047	0 025	0.141	0.065
EX1004930	TP22 1 2	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004931	TP24 0 5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004932	TP25 1 2	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004933	TP26 0 5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004934	TP27 0 3	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EX1004935	TP28 0 5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.02	<0.01
EX1004936	TP29 0 5	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	0.032	0.026	0 011	0.055	0.053

Where individual results are flagged see report notes for status.

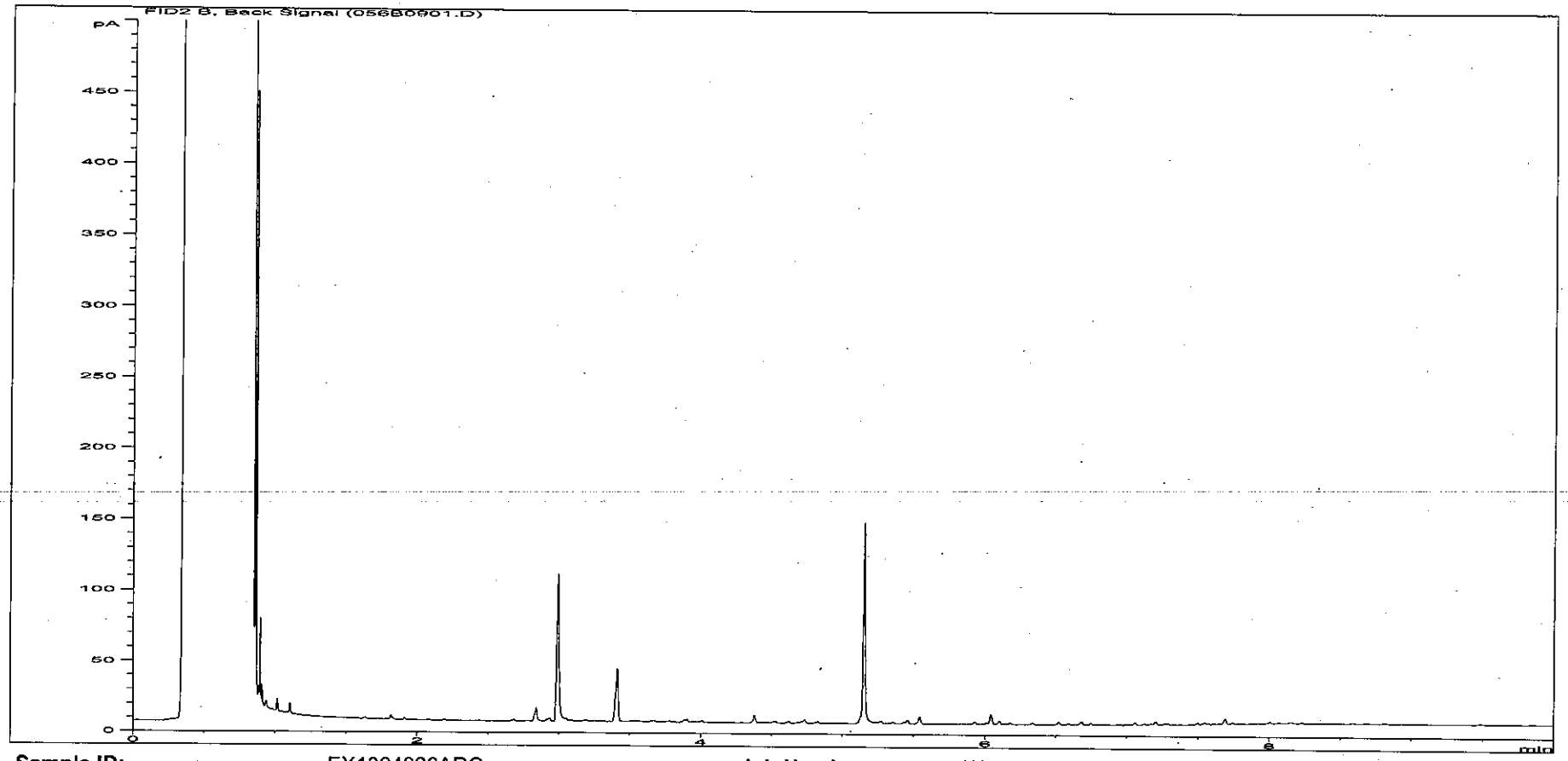
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004926ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH20 0.75
Acquisition Date/Time:	23-Feb-10, 12:12:59		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\007F0901.D		

Where individual results are flagged see report notes for status.

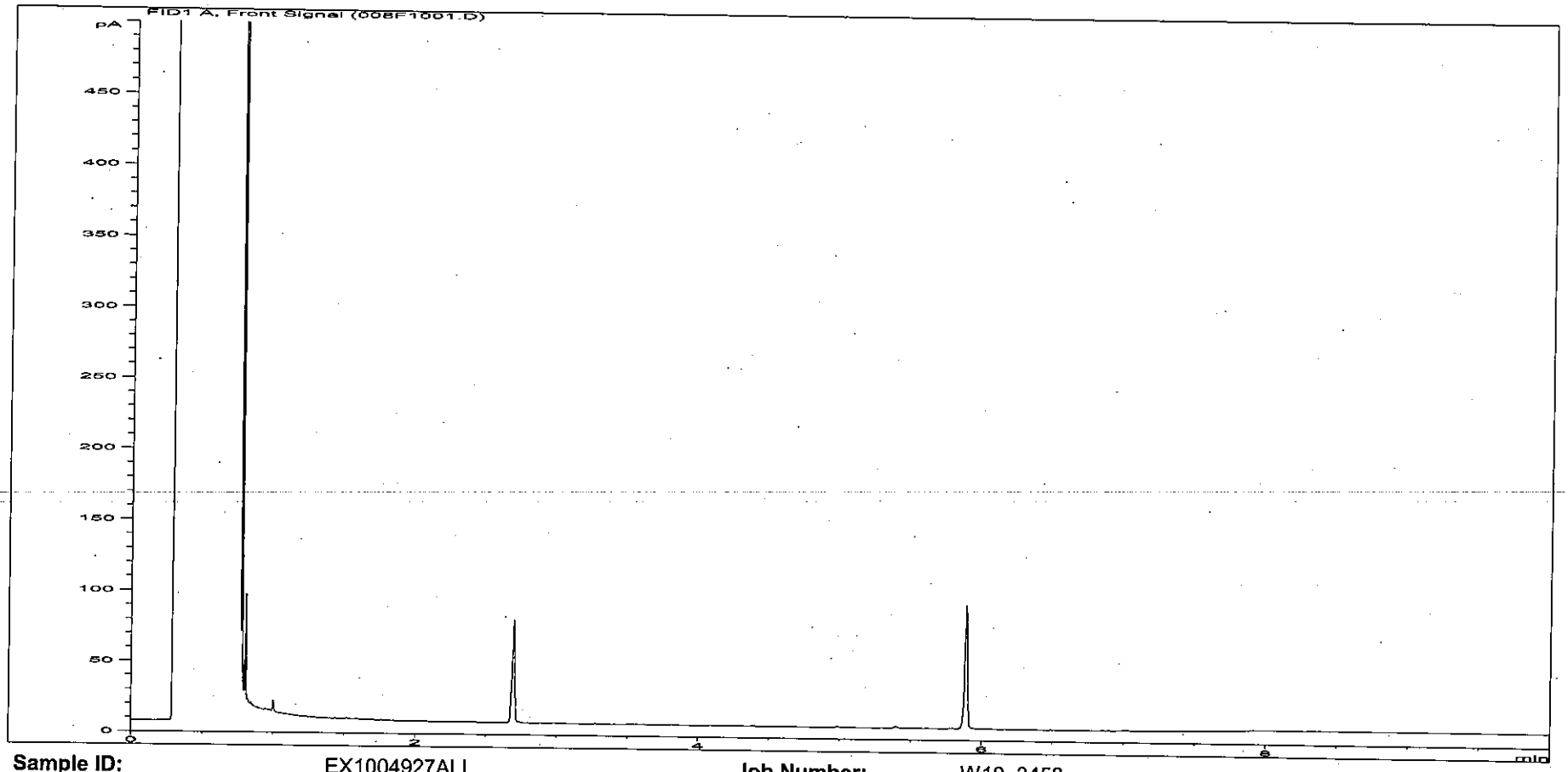
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004926ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH20 0.75
Acquisition Date/Time:	23-Feb-10, 12:12:59		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\056B0901.D		

Where individual results are flagged see report notes for status.

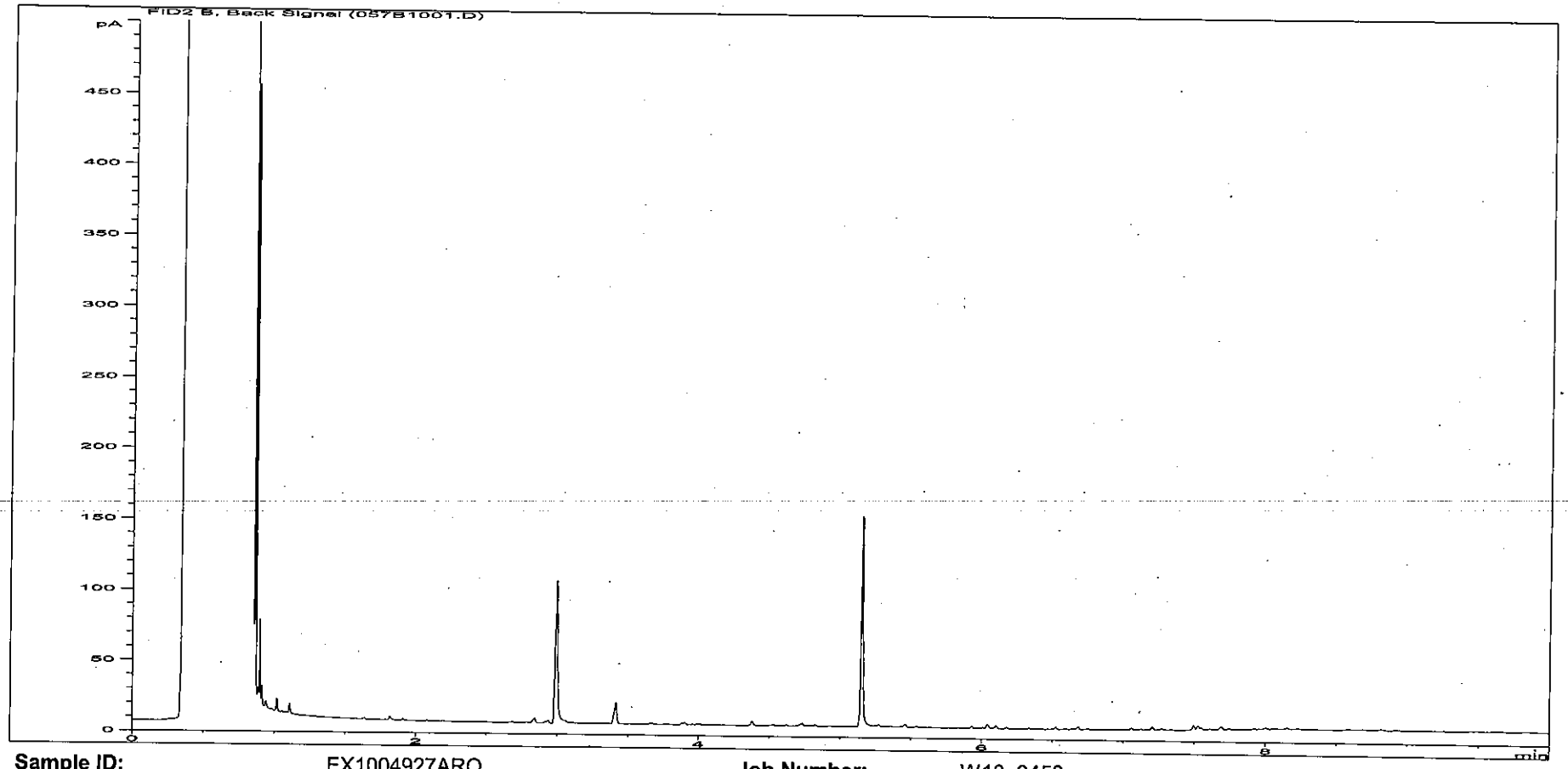
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004927ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH23 0.5
Acquisition Date/Time:	23-Feb-10, 12:30:14		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\008F1001.D		

Where individual results are flagged see report notes for status.

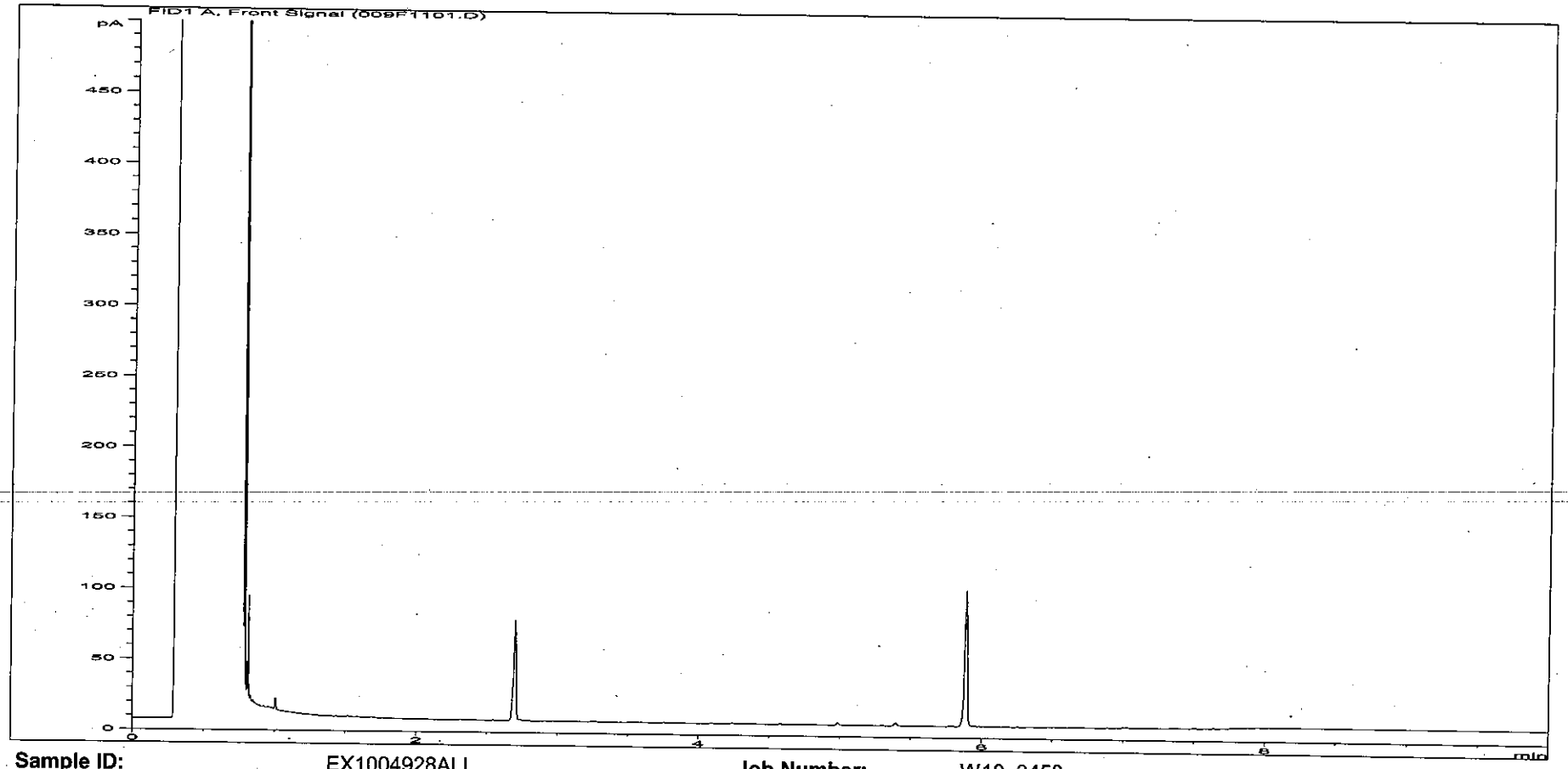
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004927ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH23 0.5
Acquisition Date/Time:	23-Feb-10, 12:30:14		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\057B1001.D		

Where individual results are flagged see report notes for status.

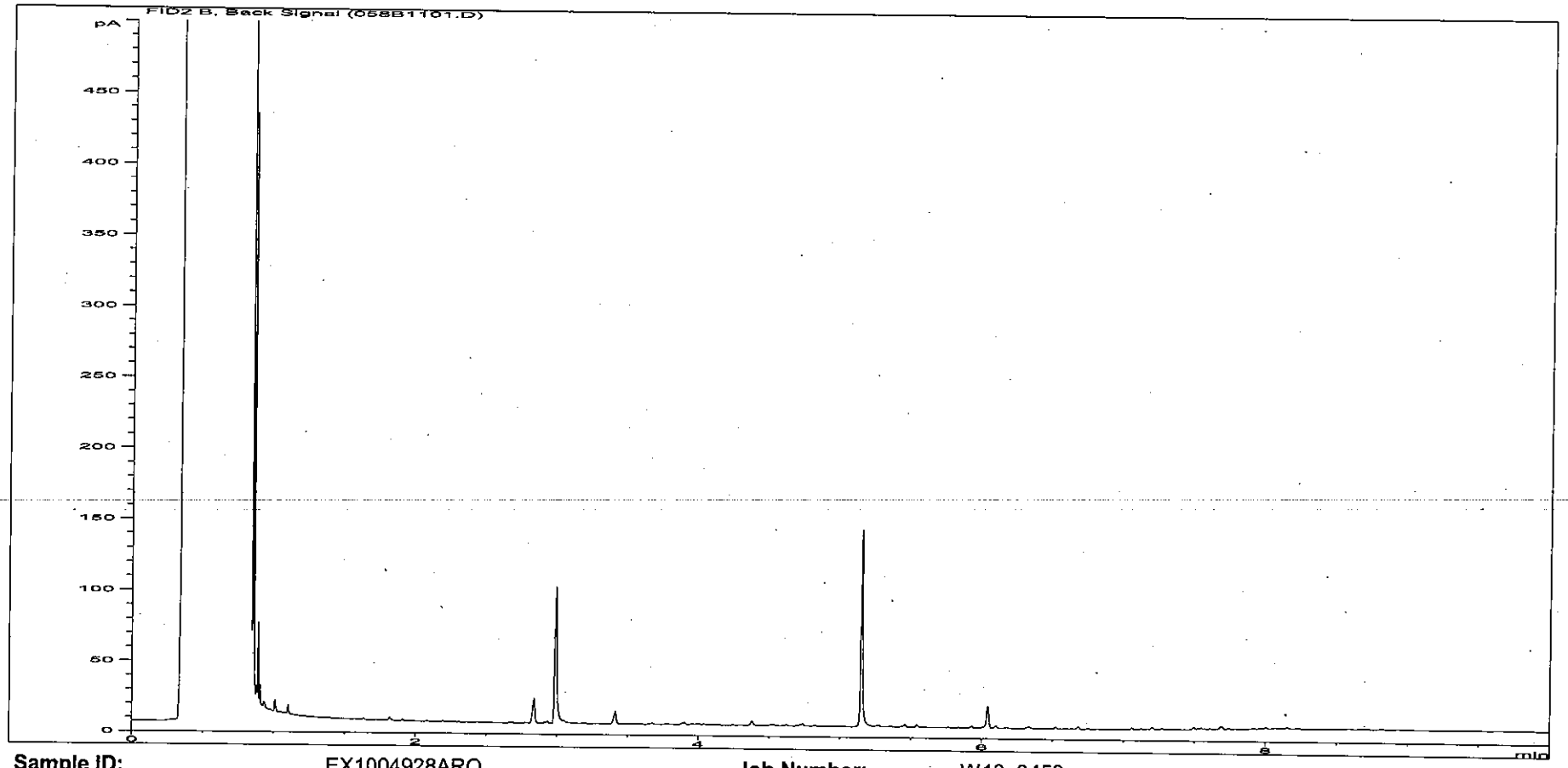
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004928ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP20 0.5
Acquisition Date/Time:	23-Feb-10, 12:47:27		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\009F1101.D		

Where individual results are flagged see report notes for status.

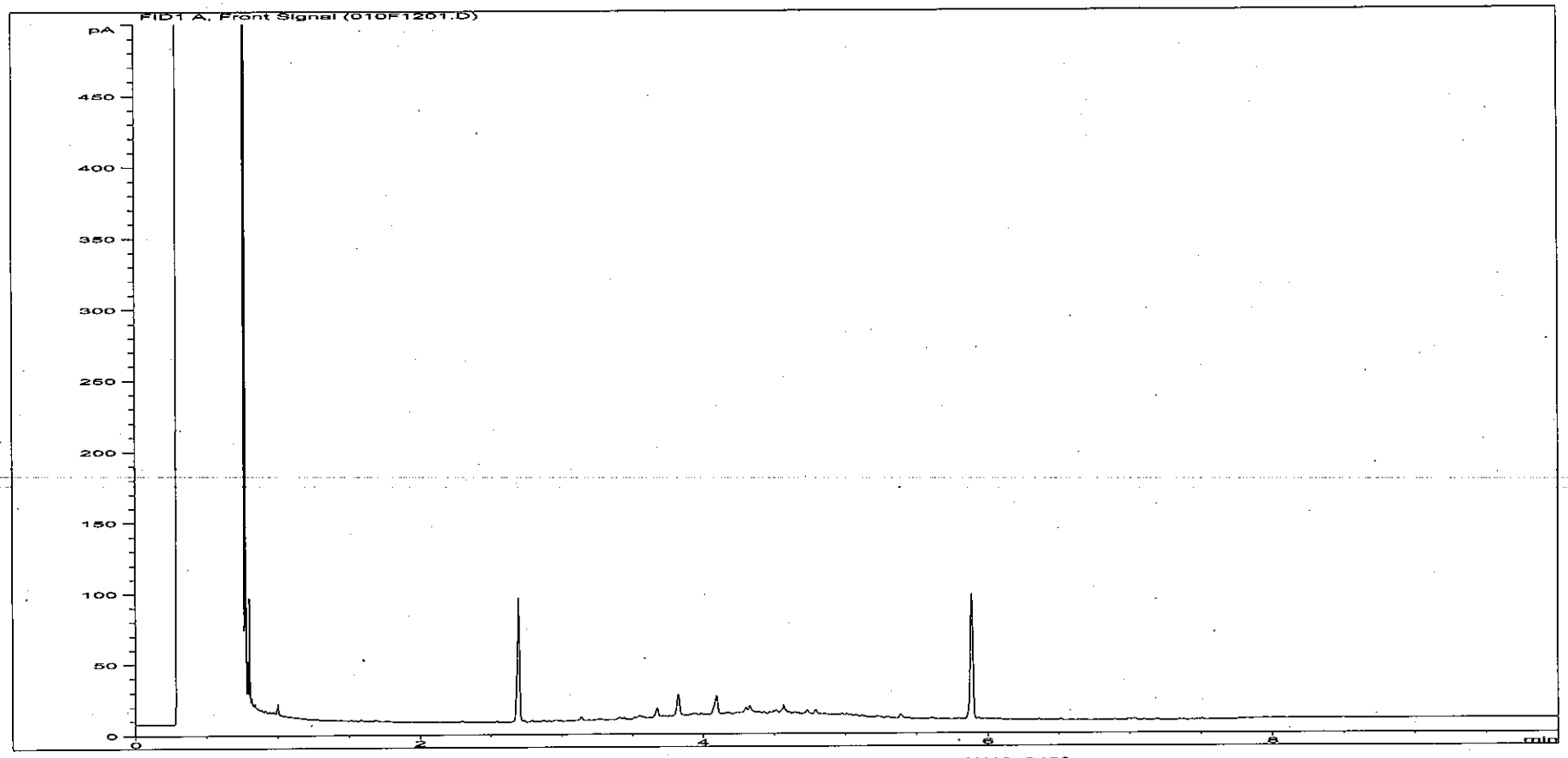
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004928ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP20 0.5
Acquisition Date/Time:	23-Feb-10, 12:47:27		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\058B1101.D		

Where individual results are flagged see report notes for status.

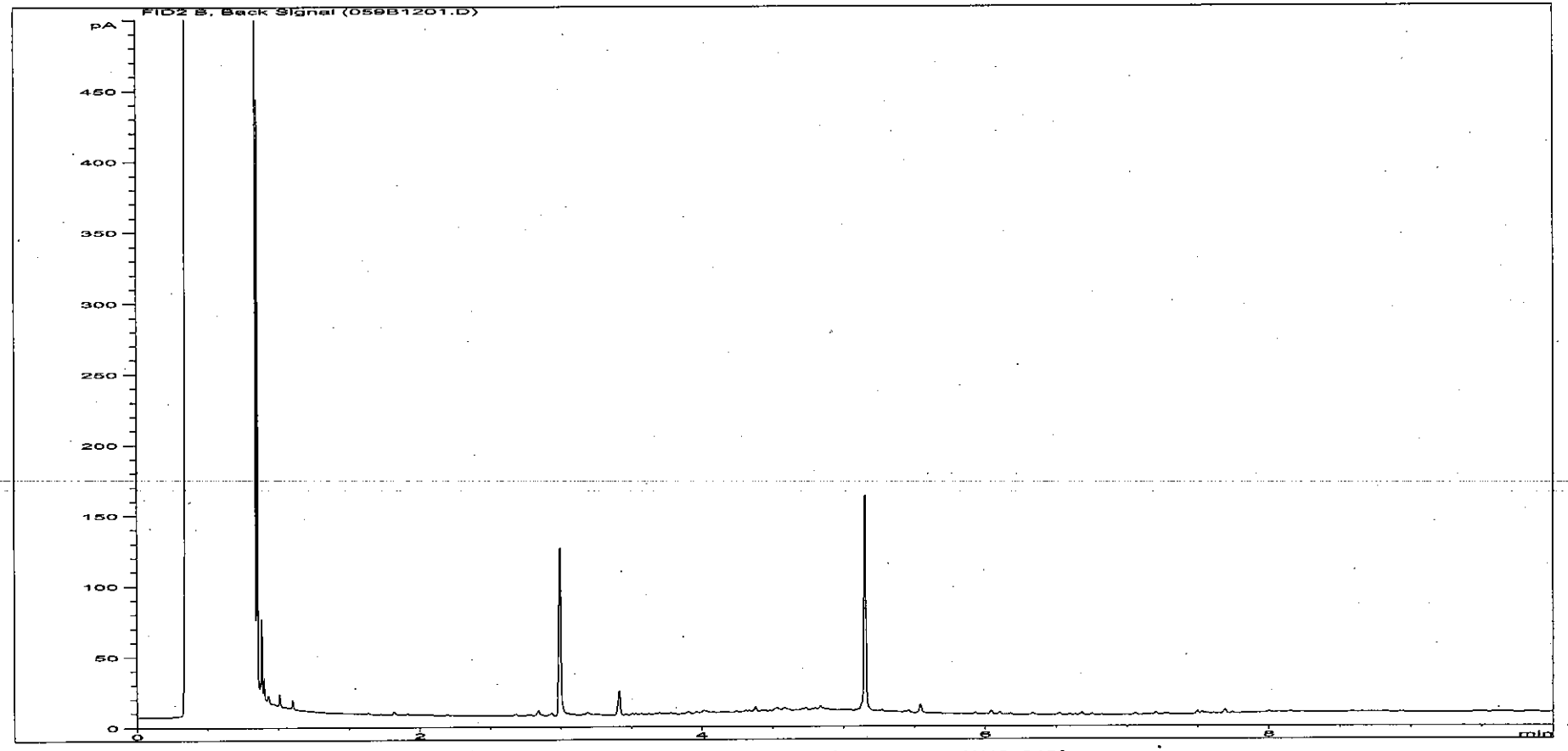
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004929ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP21 0.5
Acquisition Date/Time:	23-Feb-10, 13:04:40		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\010F1201.D		

Where individual results are flagged see report notes for status.

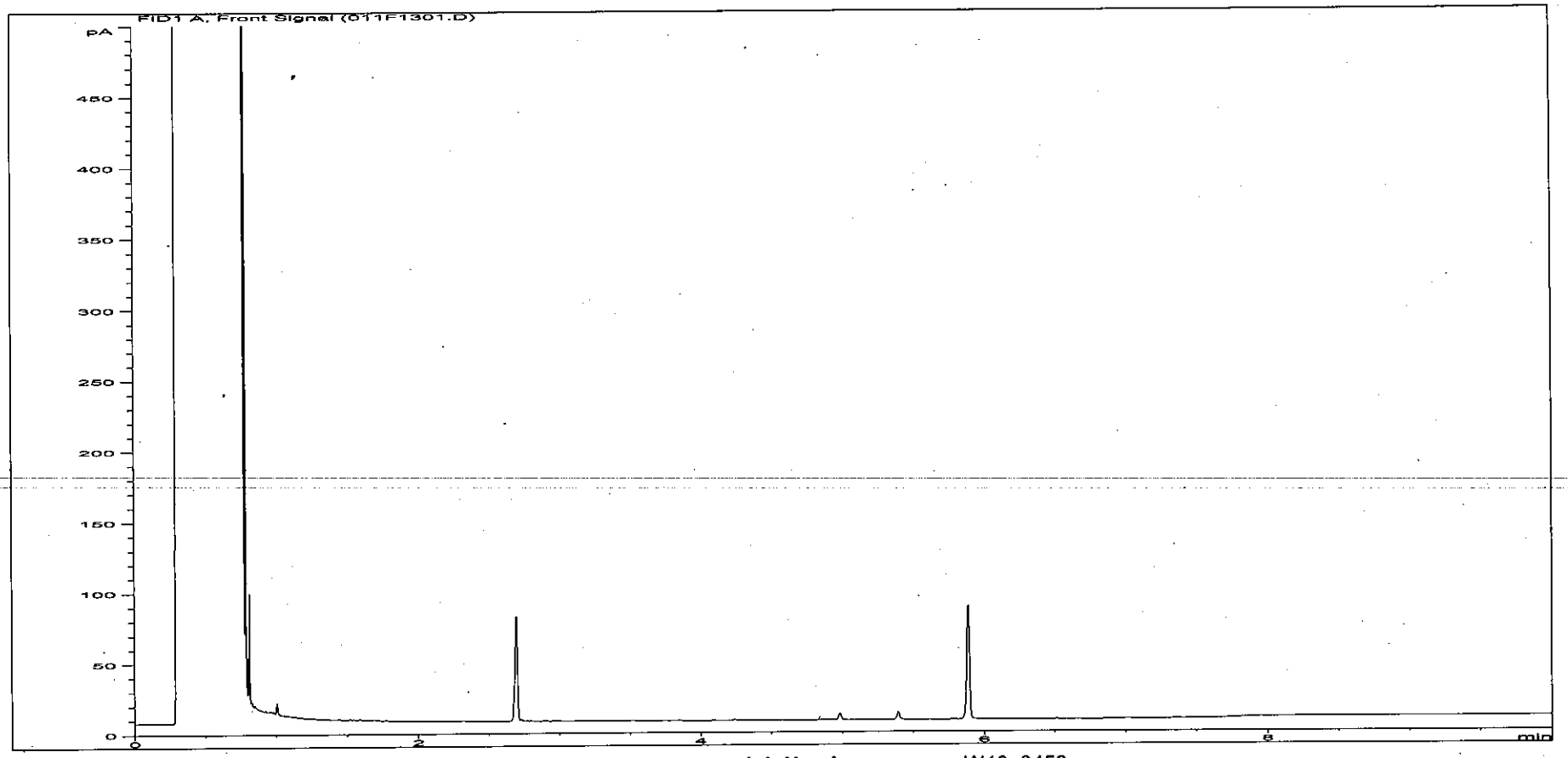
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004929ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP21 0.5
Acquisition Date/Time:	23-Feb-10, 13:04:40		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\059B1201.D		

Where individual results are flagged see report notes for status.

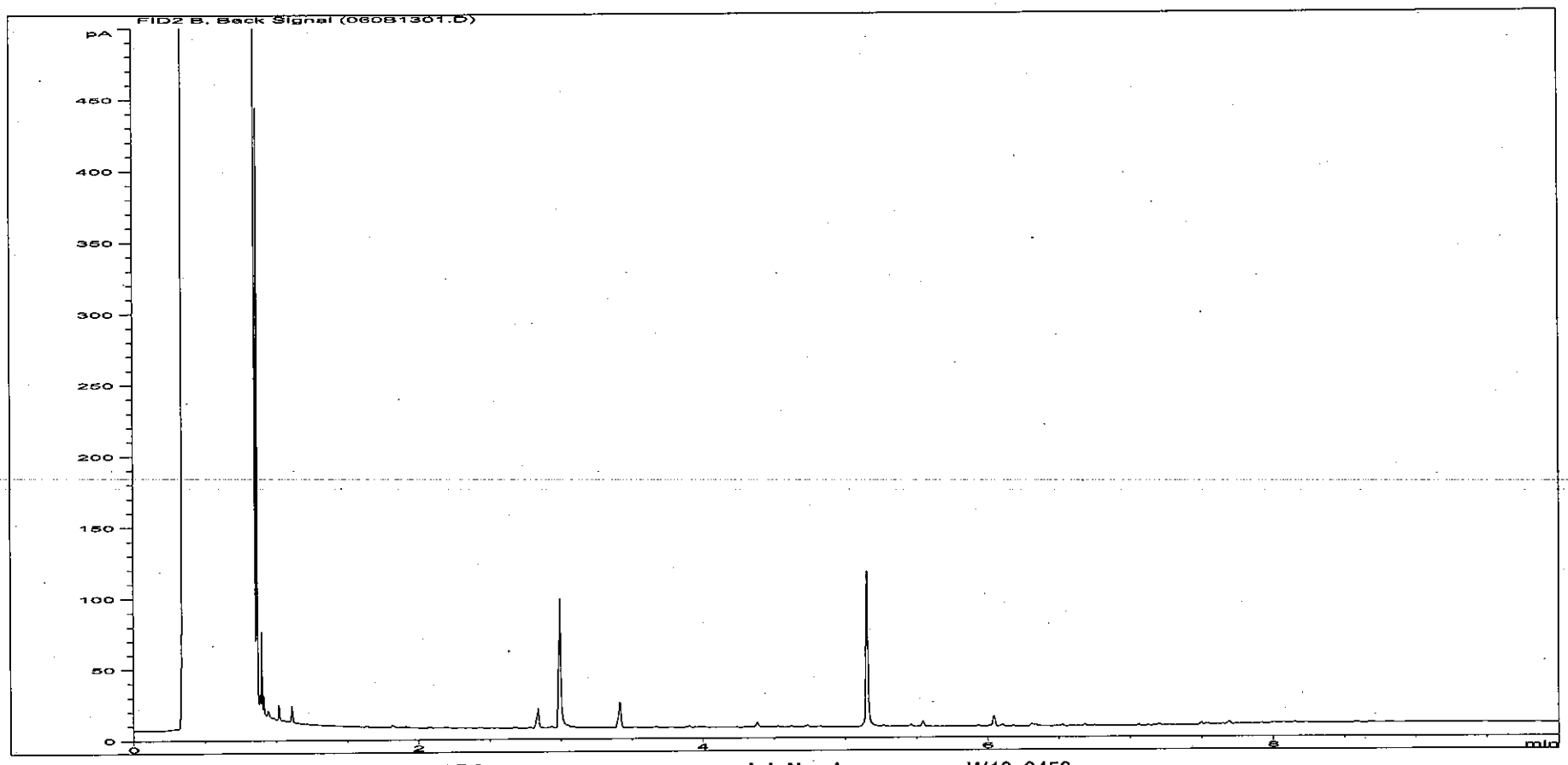
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004930ALI	**Job Number:**	W10_3458
Multiplier:	0.02	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP22 1.2
Acquisition Date/Time:	23-Feb-10, 13:21:55		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\011F1301.D		

Where individual results are flagged see report notes for status.

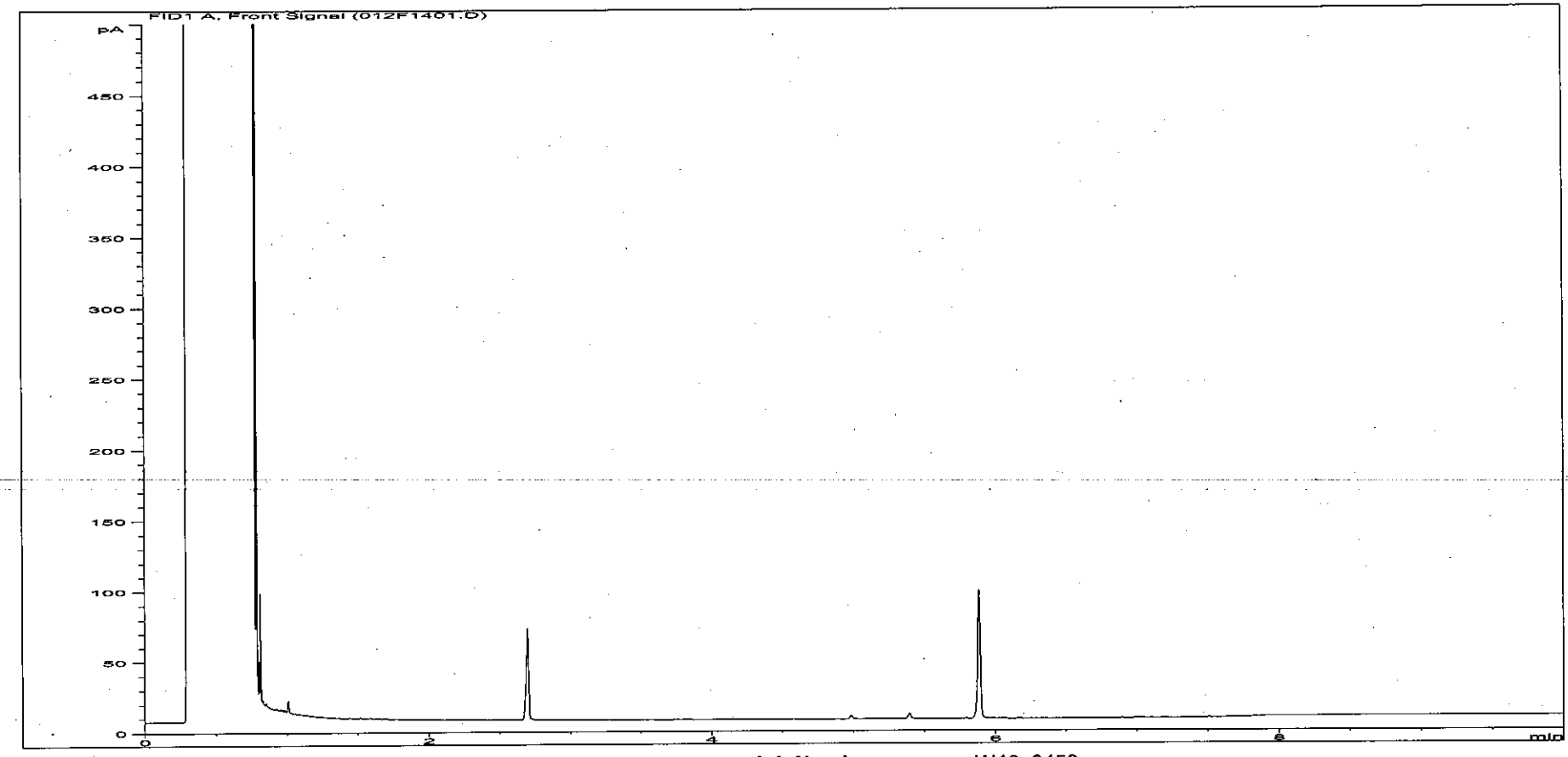
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004930ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP22 1.2
Acquisition Date/Time:	23-Feb-10, 13:21:55		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\060B1301.D		

Where individual results are flagged see report notes for status.

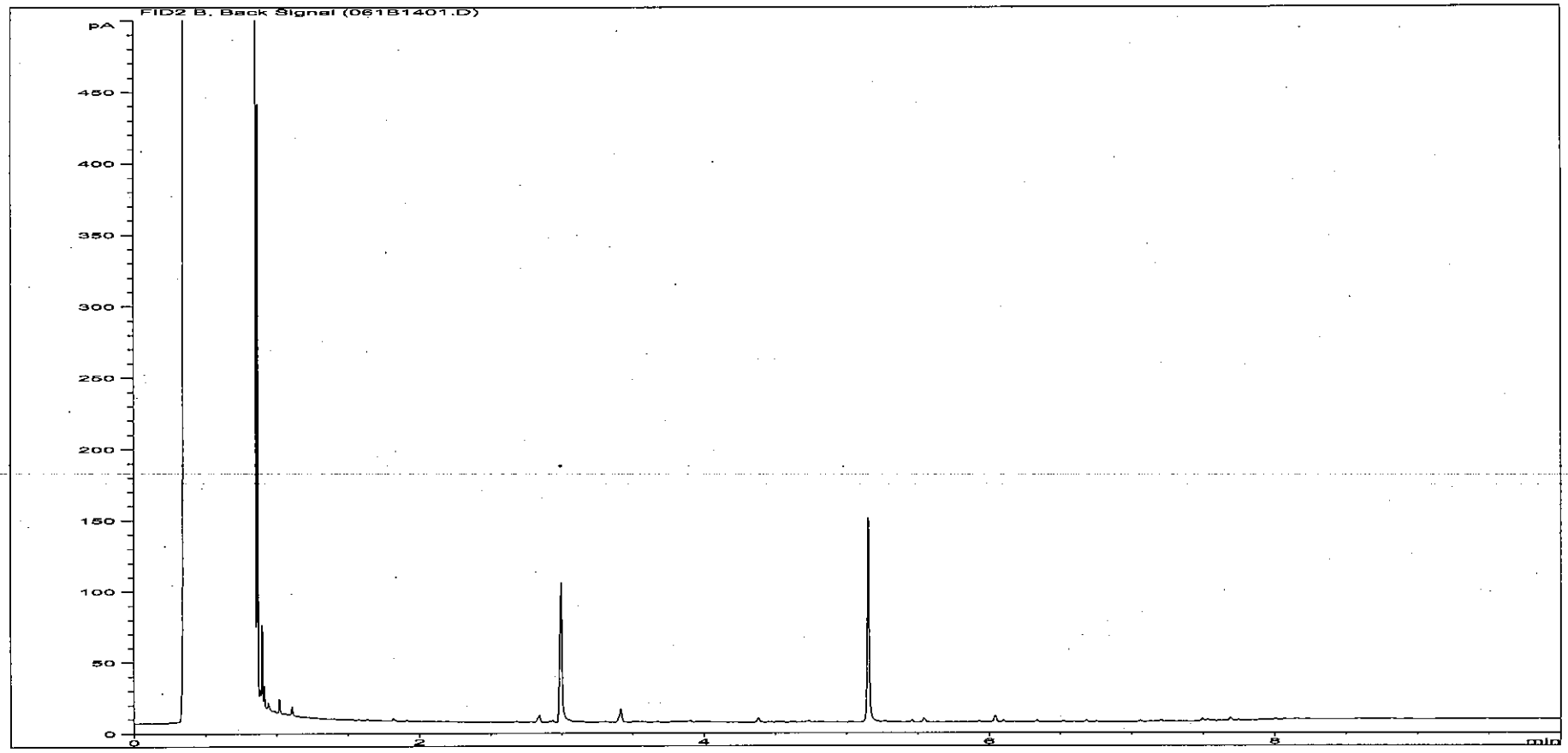
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004931ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP24 0.5
Acquisition Date/Time:	23-Feb-10, 13:39:08		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\012F1401.D		

Where individual results are flagged see report notes for status.

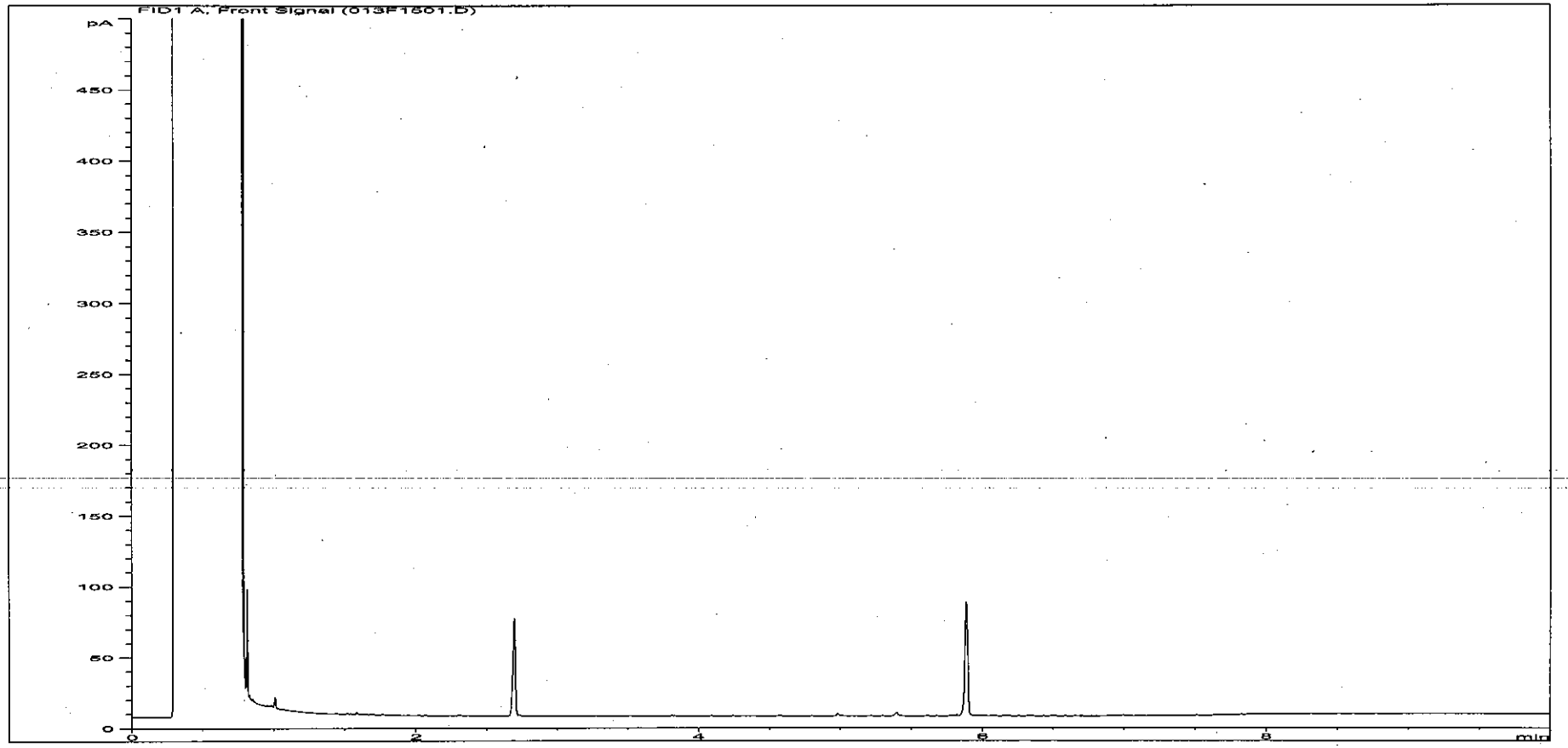
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004931ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP24 0.5
Acquisition Date/Time:	23-Feb-10, 13:39:08		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\061B1401.D		

Where individual results are flagged see report notes for status.

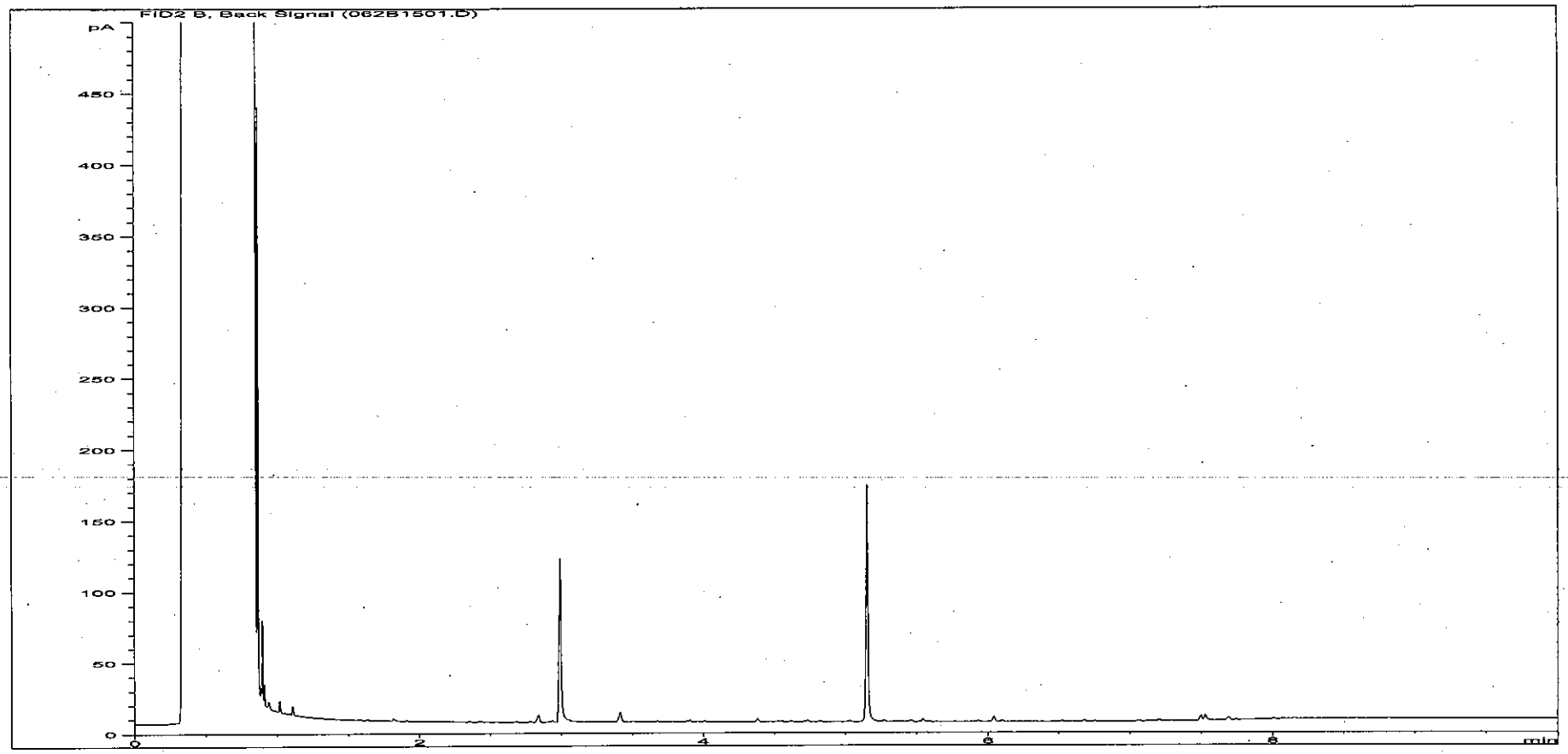
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004932ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP25 1.2
Acquisition Date/Time:	23-Feb-10, 13:56:24		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\013F1501.D		

Where individual results are flagged see report notes for status.

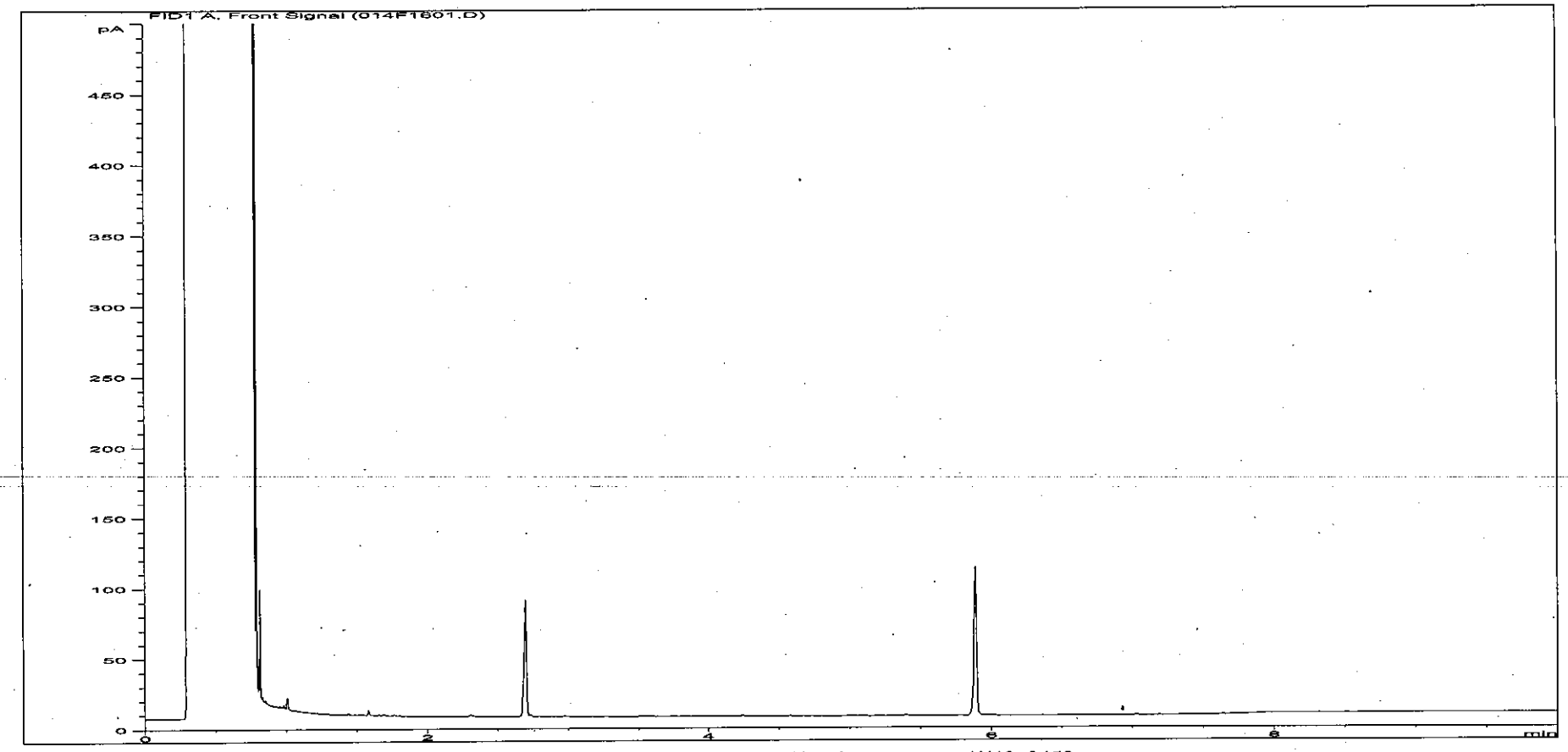
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004932ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP25 1.2
Acquisition Date/Time:	23-Feb-10, 13:56:24		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\062B1501.D		

Where individual results are flagged see report notes for status.

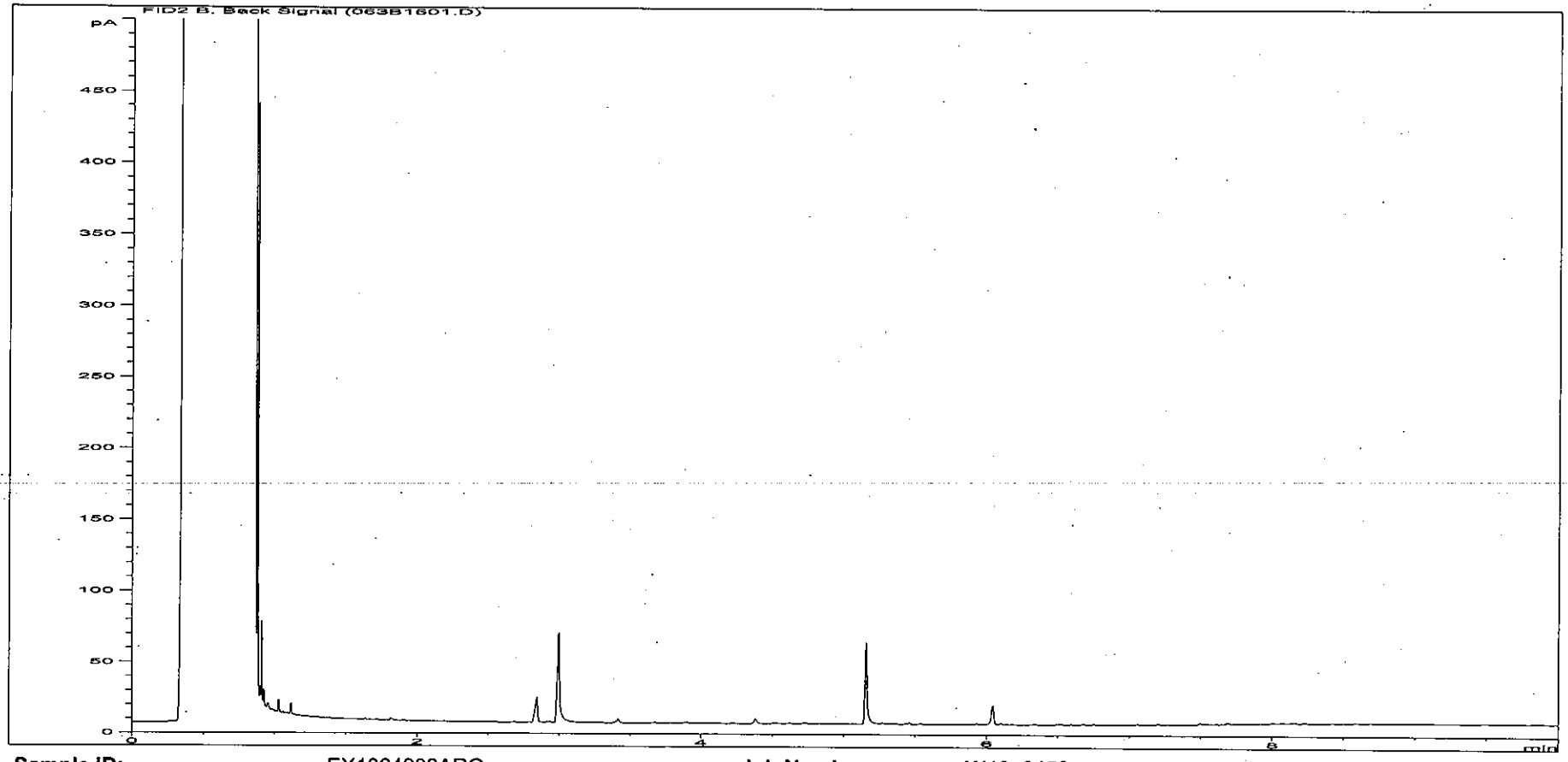
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004933ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP26 0.5
Acquisition Date/Time:	23-Feb-10, 14:13:40		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\014F1601.D		

Where individual results are flagged see report notes for status.

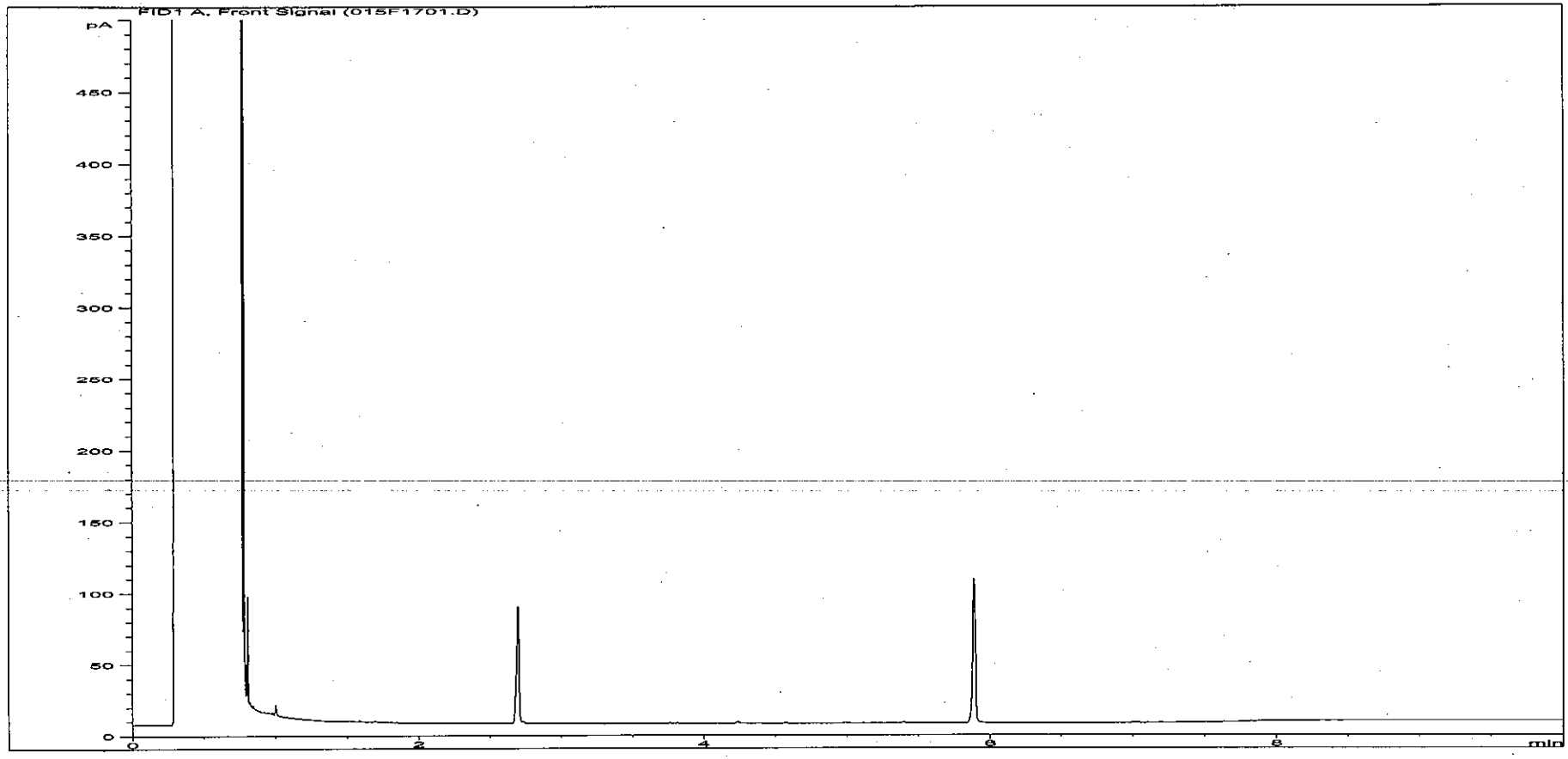
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004933ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP26 0.5
Acquisition Date/Time:	23-Feb-10, 14:13:40		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\063B1601.D		

Where individual results are flagged see report notes for status.

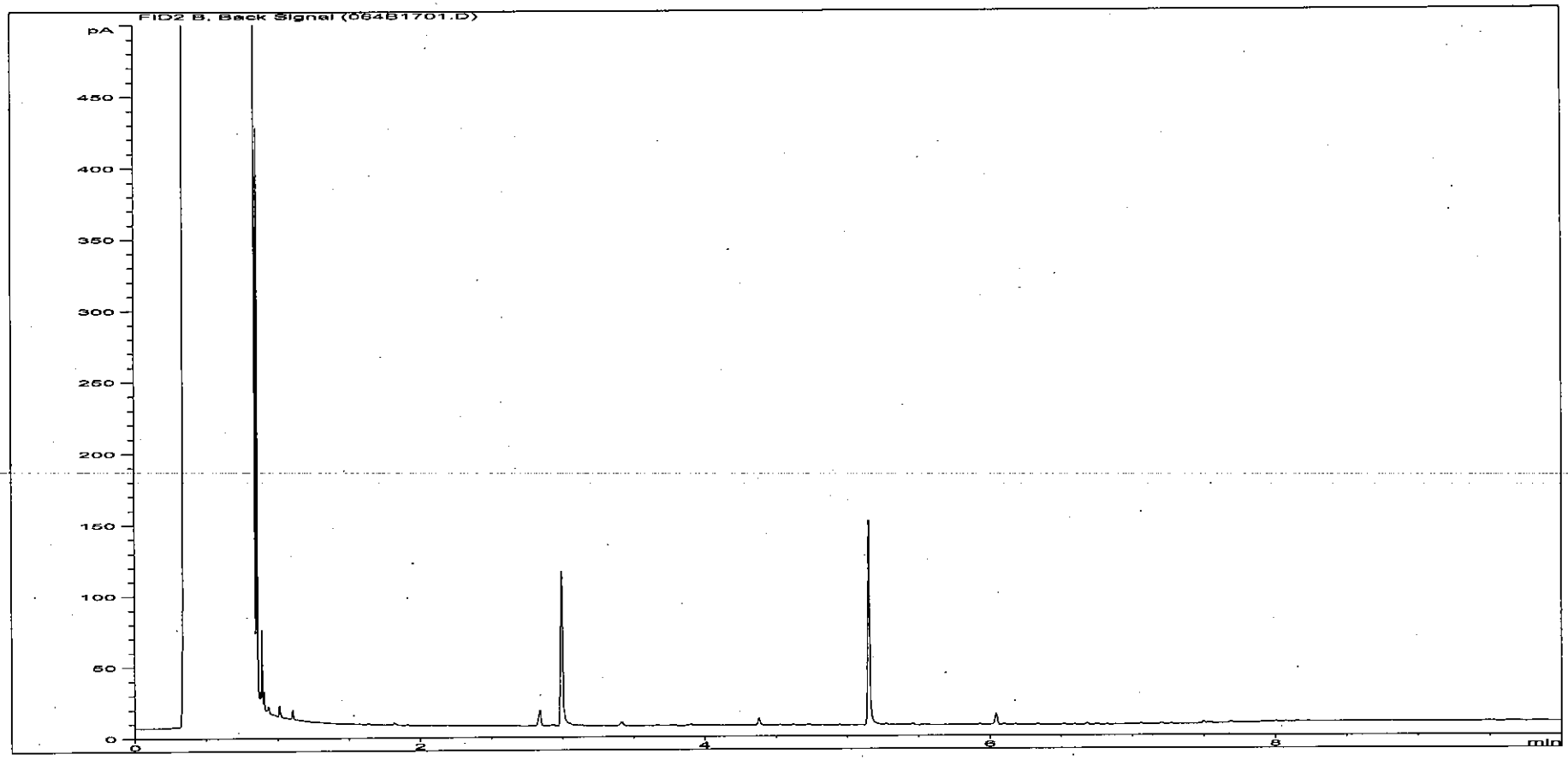
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004934ALI	**Job Number:**	W10_3458
Multiplier:	0.02	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP27 0.3
Acquisition Date/Time:	23-Feb-10, 14:30:43		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\015F1701.D		

Where individual results are flagged see report notes for status.

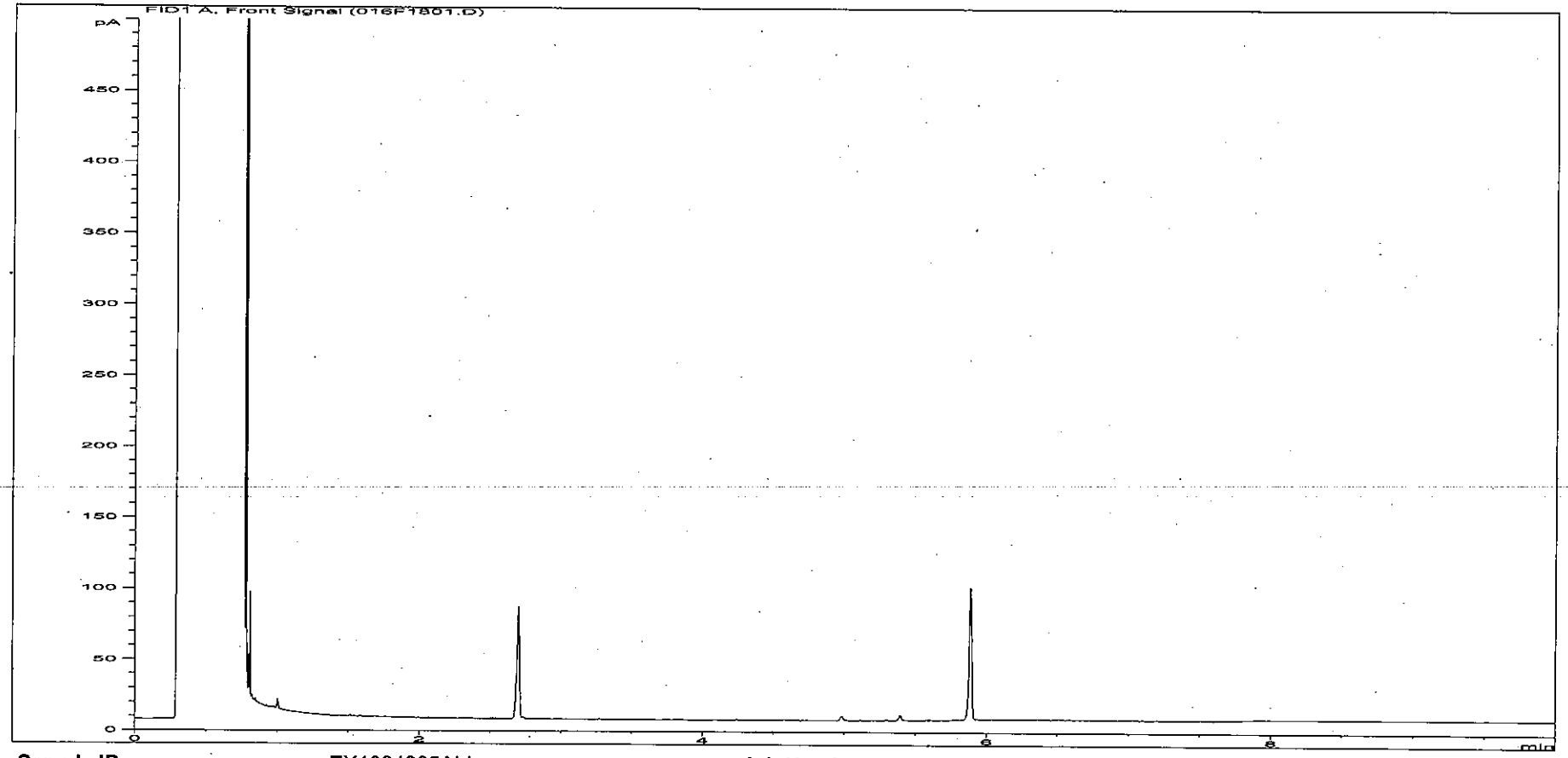
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004934ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP27 0.3
Acquisition Date/Time:	23-Feb-10, 14:30:43		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\064B1701.D		

Where individual results are flagged see report notes for status.

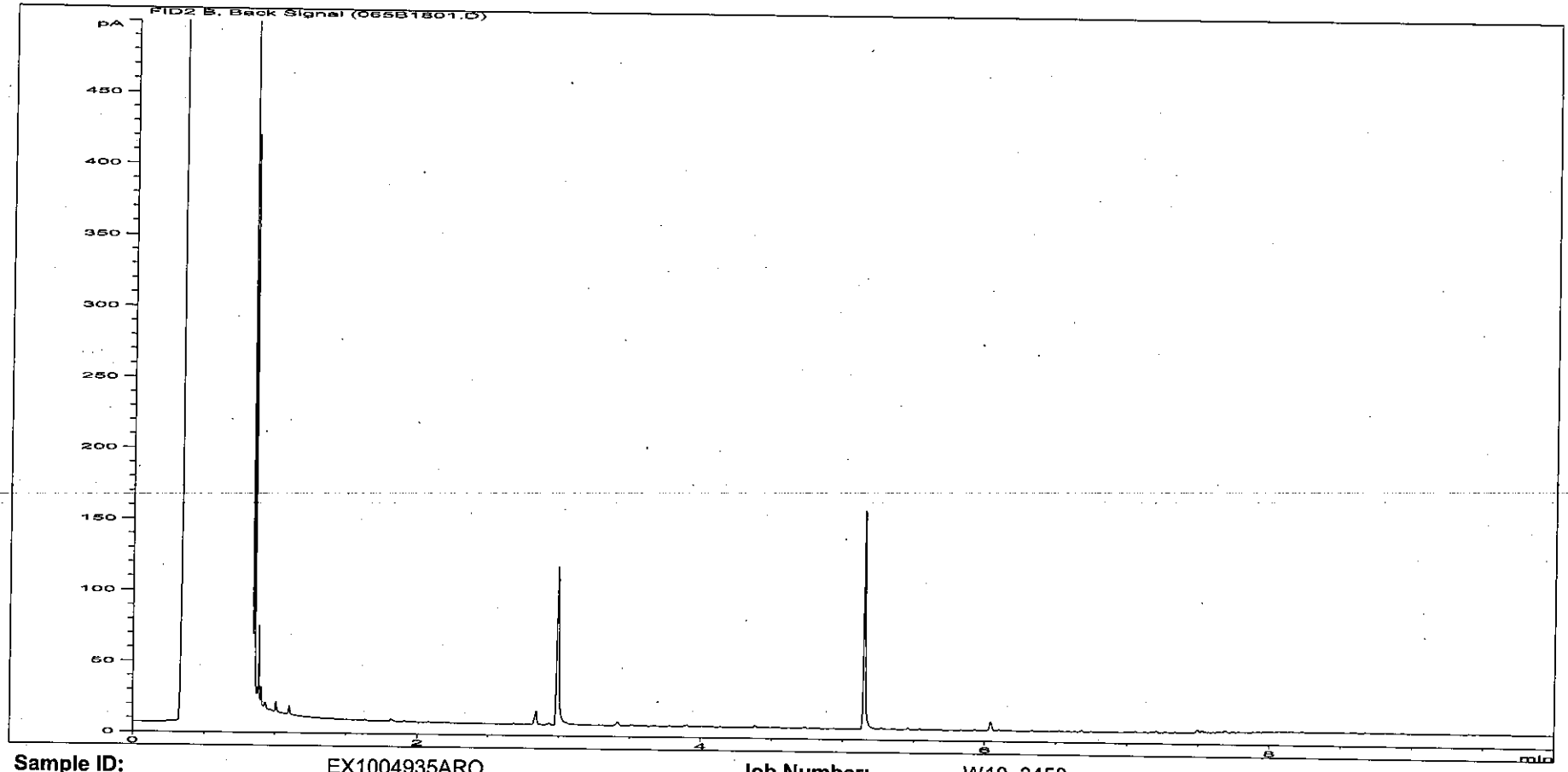
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004935ALI	**Job Number:**	W10_3458
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP28 0.5
Acquisition Date/Time:	23-Feb-10, 14:47:57		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\016F1801.D		

Where individual results are flagged see report notes for status.

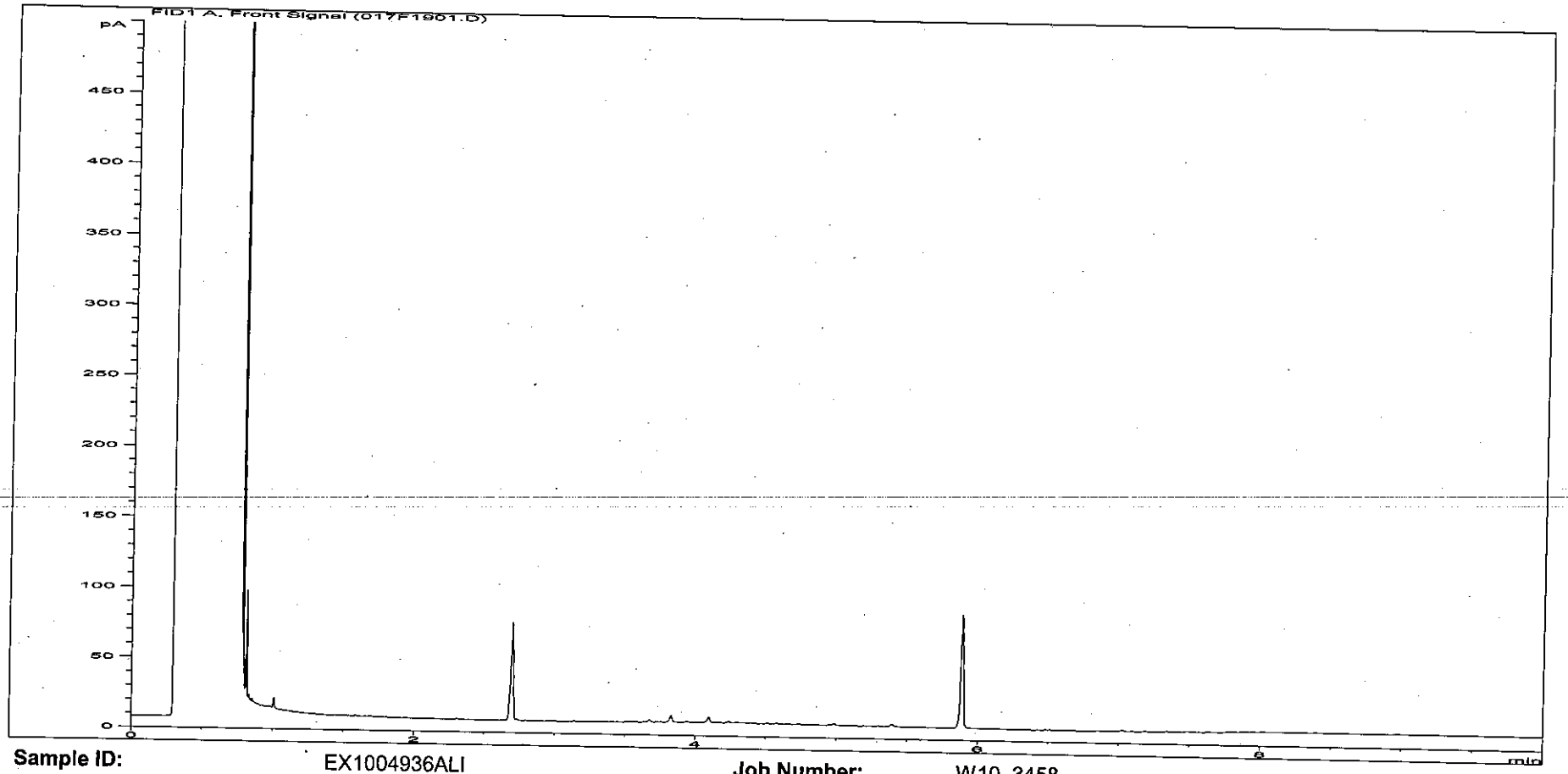
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004935ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP28 0.5
Acquisition Date/Time:	23-Feb-10, 14:47:57		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\065B1801.D		

Where individual results are flagged see report notes for status.

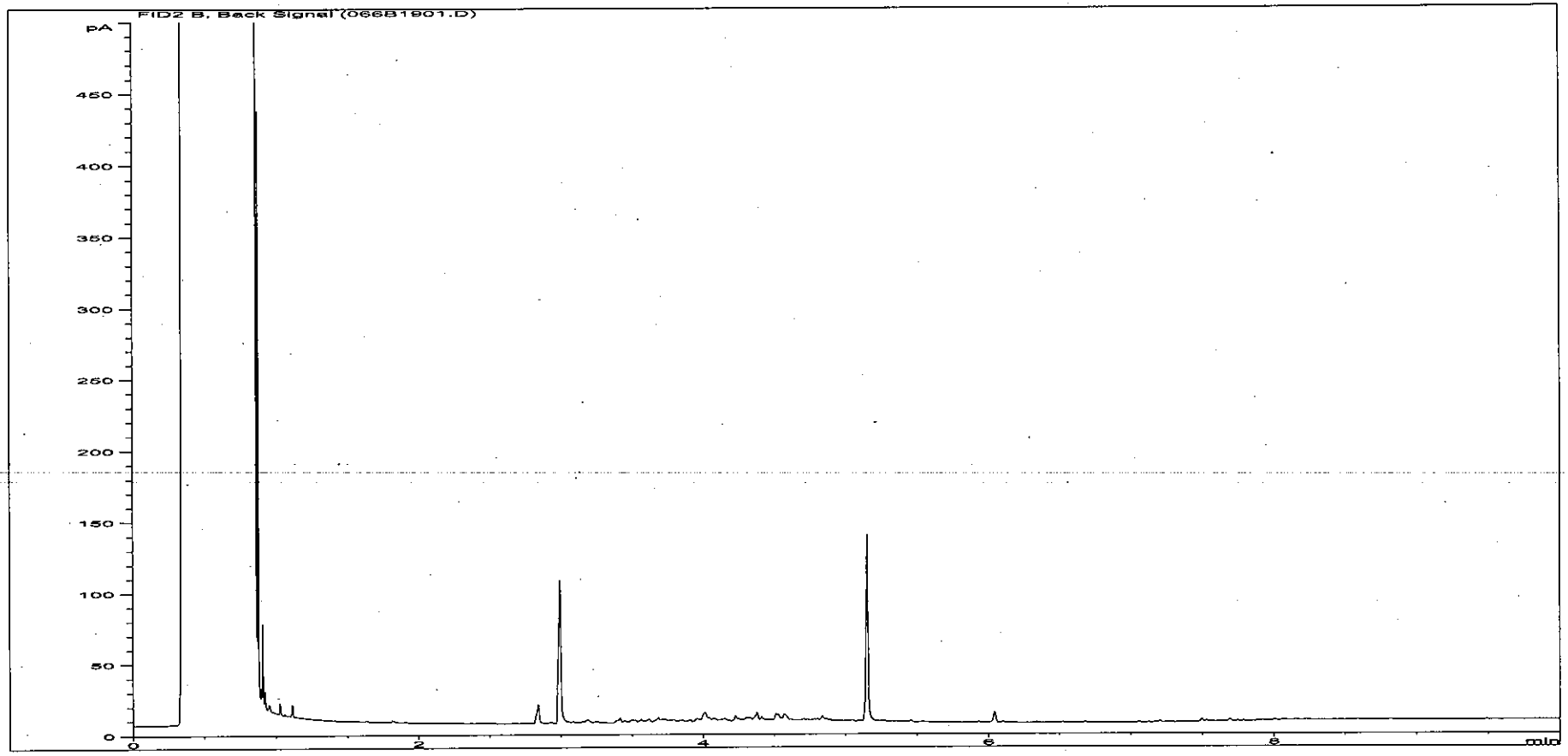
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004936ALI	**Job Number:**	W10_3458
Multiplier:	0.02	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP29 0.5
Acquisition Date/Time:	23-Feb-10, 15:05:12		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\017F1901.D		

Where individual results are flagged see report notes for status.

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004936ARO	**Job Number:**	W10_3458
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	TP29 0.5
Acquisition Date/Time:	23-Feb-10, 15:05:12		
Datafile:	D:\TES\DATA\Y2010\0223TPH_GC16\022310 2010-02-23 09-34-47\066B1901.D		

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on an air dried basis
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite
NADIS Denotes No Asbestos Detected In Sample
NBFO Denotes No Bulk Fibres Observed

Symbol Reference

^ Sub-contracted analysis
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined
N.Det Not detected
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
* All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

END OF REPORT

Where individual results are flagged see report notes for status.

Our Ref: EXR/103411 (Ver. 1)
Your Ref:
February 23, 2010

scientifics

Scientifics Ltd
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

[redacted]
Hyder Consulting Limited
5th Floor
The Pethay
All Saints Street
Bristol
BS1 2NL

For the attention of [redacted]

Dear [redacted]

WATER SAMPLE ANALYSIS - LNO1323

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that from 1 January 2003 our policy for the retention of paper based laboratory records and analysis reports will be 6 years.

The work was carried out in accordance with Scientifics Ltd Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for Scientifics

[redacted]
Project Co-ordinator
[redacted]

TEST REPORT
WATER SAMPLE ANALYSIS

UKAS TESTING
1252

Report No. EXR/103411 (Ver. 1)

Hyder Consulting Limited
5th Floor
The Pethay
All Saints Street
Bristol
BS1 2NL

Site: LNO1323

The 5 samples described in this report were logged for analysis by Scientifics on 17-Feb-2010.
The analysis was completed by: 23-Feb-2010

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by Scientifics Ltd.

The following tables are contained in this report:

On behalf of Scientifics : [redacted]

Project Co-ordinator

Date of Issue: 23-Feb-2010

Tests marked '^' have been subcontracted to another laboratory.

Scientifics Ltd accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :		mg/l	mg/l	mg/l	mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
Method Codes :		KONENS	ICPMSW	ICPMSW	ICPMSW	PAHMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	KONENS	GROHSA	TPHFID-Si		
Method Reporting Limits :		1	0.001	0.001	0 0001	0.01	0.001	0.001	0.002	0.001	0 0001	0.001	0 01	0.1	0.01		
UKAS Accredited :		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no		
Laboratory ID Number EXI	Client Sample Description	Chloride as Cl w	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	PAH MS-SIM (16)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Ammoniacal Nitrogen as N	GRO-HSA (AA)	TPH GC (AA)		
1004775	BH22	29	0.006	0.011	<0.0001	Req	0.001	<0.001	<0.002	0.004	<0 0001	0.002	1.1	Req	Req		
1004776	BH23	93	0.004	0.007	<0.0001	Req	0.001	<0.001	0.009	<0.001	<0 0001	0.033	0.2	Req	Req		
1004777	BH24	120	0.003	0.006	<0.0001	Req	0.001	<0.001	0.003	0.003	<0 0001	0.002	0 04	Req	Req		
1004778	BH25	33	0.006	0.007	<0.0001	Req	0.001	<0.001	<0.002	0.001	<0 0001	<0 001	0 04	Req	Req		
1004779	BH26	62	0.007	0.011	0 0002	Req	0.004	<0.001	0.011	<0.001	<0 0001	0.001	<0.01	Req	Req		

scientifics
Bretby Business Park, Ashby Road
Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Client Name	Hyder Consulting Limited
Contact	Mr M[redacted]

LNO1323

Water Sample Analysis

Date Printed	23-Feb-10
Report Number	EXR/103411
Table Number	1

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH22	**Job Number:**	W10_3411
LIMS ID Number:	EX1004775	**Date Booked in:**	17-Feb-10
QC Batch Number:	0503	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	219PAH.MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	3.39	0.023	95
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.173	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	107
Acenaphthene-d10	108
Phenanthrene-d10	115
Chrysene-d12	111
Perylene-d12	117

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	88
Terphenyl-d14	98

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH23	**Job Number:**	W10_3411
LIMS ID Number:	EX1004776	**Date Booked in:**	17-Feb-10
QC Batch Number:	0503	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	219PAH.MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	102
Acenaphthene-d10	103
Phenanthrene-d10	107
Chrysene-d12	101
Perylene-d12	105

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	91
Terphenyl-d14	100

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH24	**Job Number:**	W10_3411
LIMS ID Number:	EX1004777	**Date Booked in:**	17-Feb-10
QC Batch Number:	0503	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	219PAH.MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	102
Acenaphthene-d10	102
Phenanthrene-d10	107
Chrysene-d12	99
Perylene-d12	106

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	89
Terphenyl-d14	97

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH25	**Job Number:**	W10_3411
LIMS ID Number:	EX1004778	**Date Booked in:**	17-Feb-10
QC Batch Number:	0503	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	219PAH.MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	-	< 0.010	-
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.160	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	98
Acenaphthene-d10	98
Phenanthrene-d10	105
Chrysene-d12	101
Perylene-d12	104

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	98
Terphenyl-d14	105

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting Limited: LNO1323		
Sample Details:	BH26	**Job Number:**	W10_3411
LIMS ID Number:	EX1004779	**Date Booked in:**	17-Feb-10
QC Batch Number:	0503	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	219PAH.MS10\	**Matrix:**	Water
Dilution:	1.0	**Ext Method:**	Sep. Funnel

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration ug/l	% Fit
Naphthalene	91-20-3	-	< 0.010	-
Acenaphthylene	208-96-8	-	< 0.010	-
Acenaphthene	83-32-9	-	< 0.010	-
Fluorene	86-73-7	-	< 0.010	-
Phenanthrene	85-01-8	-	< 0.010	-
Anthracene	120-12-7	-	< 0.010	-
Fluoranthene	206-44-0	-	< 0.010	-
Pyrene	129-00-0	-	< 0.010	-
Benzo[a]anthracene	56-55-3	9.21	0.012	59
Chrysene	218-01-9	-	< 0.010	-
Benzo[b]fluoranthene	205-99-2	-	< 0.010	-
Benzo[k]fluoranthene	207-08-9	-	< 0.010	-
Benzo[a]pyrene	50-32-8	-	< 0.010	-
Indeno[1,2,3-cd]pyrene	193-39-5	-	< 0.010	-
Dibenzo[a,h]anthracene	53-70-3	-	< 0.010	-
Benzo[g,h,i]perylene	191-24-2	-	< 0.010	-
Total (USEPA16) PAHs	-	-	< 0.162	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	103
Acenaphthene-d10	103
Phenanthrene-d10	106
Chrysene-d12	101
Perylene-d12	111

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	83
Terphenyl-d14	92

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.

Gasoline Range Organics
(BTEX and Aliphatic Carbon Ranges)

Customer and Site Details: Hyder Consulting Limited : LNO1323
Job Number: W10_3411
Directory: D:\TES\DATA\Y2010\0223HSA_GC12\022310 2010-02-23 05-50-11\113B1301.D
Method: Headspace GCFID

Matrix: Water
Date Booked in: 17-Feb-10
Date extracted: 23-Feb-10
Date Analysed: 23-Feb-10, 10:0

*** Sample data with an asterisk are not UKAS accredited.**

			Concentration, (mg/l)					Aliphatics				
	Sample ID	Client ID	Benzene	Toluene	Ethyl benzene	m/p-Xylene	o-Xylene	C5 - C6	>C6 - C7	>C7 - C8	>C8 - C10	Total GRO
*	EX1004775	BH22	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1004776	BH23	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1004777	BH24	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1004778	BH25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1
*	EX1004779	BH26	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	<0.1	<0.1	<0.1

Note: Benzene elutes between C6 and C7, toluene elutes between C7 and C8, ethyl benzene and the xylenes elute between C8 and C9.
Xylenes have been deducted from the C8-C10 band to give the aliphatic fraction, however aromatic compounds may still be contributing to this fraction.

Where individual results are flagged see report notes for status.

ALIPHATIC / AROMATIC FRACTION BY GC/FID

Customer and Site Details: Hyder Consulting Limited : LNO1323
Job Number: W10_3411
QC Batch Number: 100503
Directory: D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\093B5101.D
Method: Separating Funnel

Separation: Silica gel
Eluents: Hexane, DCM

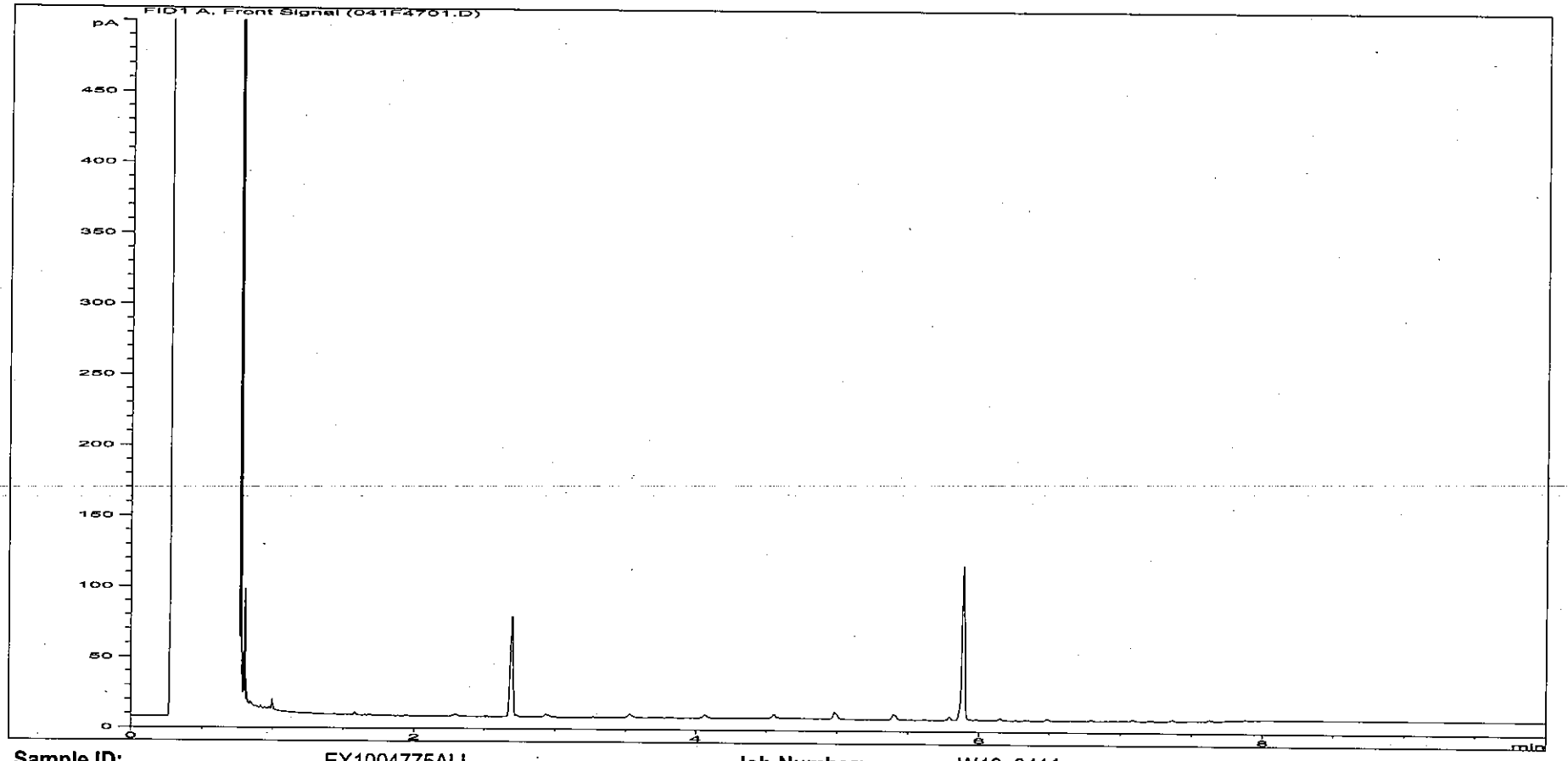
Matrix: Water
Date Booked ir 17-Feb-10
Date Extracted 19-Feb-10
Date Analysed 23-Feb-10, 00:42:07

* This sample data is not UKAS accredited.

		Concentration, (mg/l)											
		>C8 - C10		>C10 - C12		>C12 - C16		>C16 - C21		>C21 - C35		>C8 - C40	
Sample ID	Client ID	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics	Aliphatics	Aromatics
EX1004775	BH22	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0 011	0.021	0.018
EX1004776	BH23	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01
EX1004777	BH24	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0 011	<0.01	0.017
EX1004778	BH25	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013
EX1004779	BH26	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01

Where individual results are flagged see report notes for status.

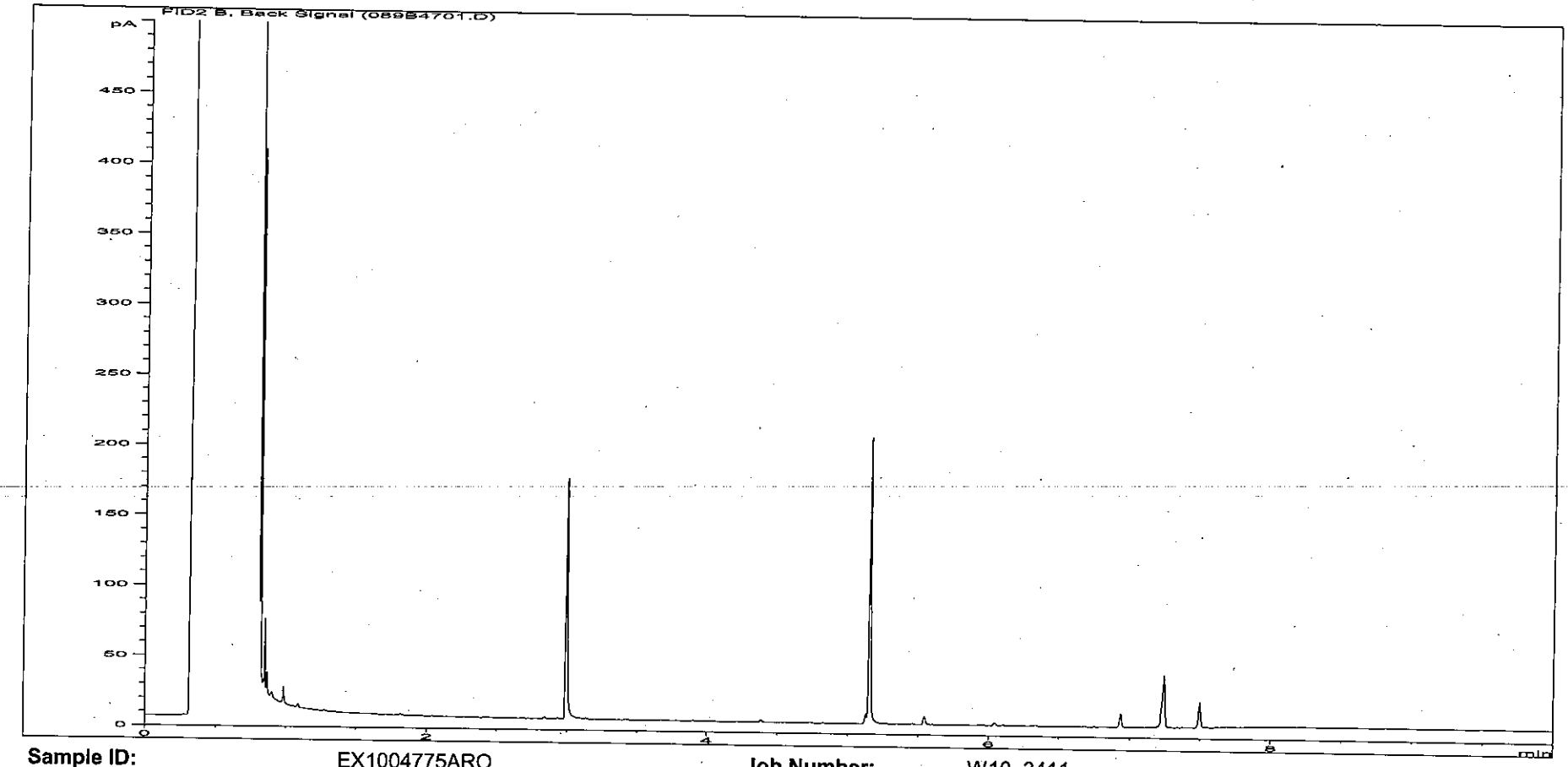
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004775ALI	**Job Number:**	W10_3411
Multiplier:	0.02	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH22
Acquisition Date/Time:	22-Feb-10, 23:32:39		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\041F4701.D		

Where individual results are flagged see report notes for status.

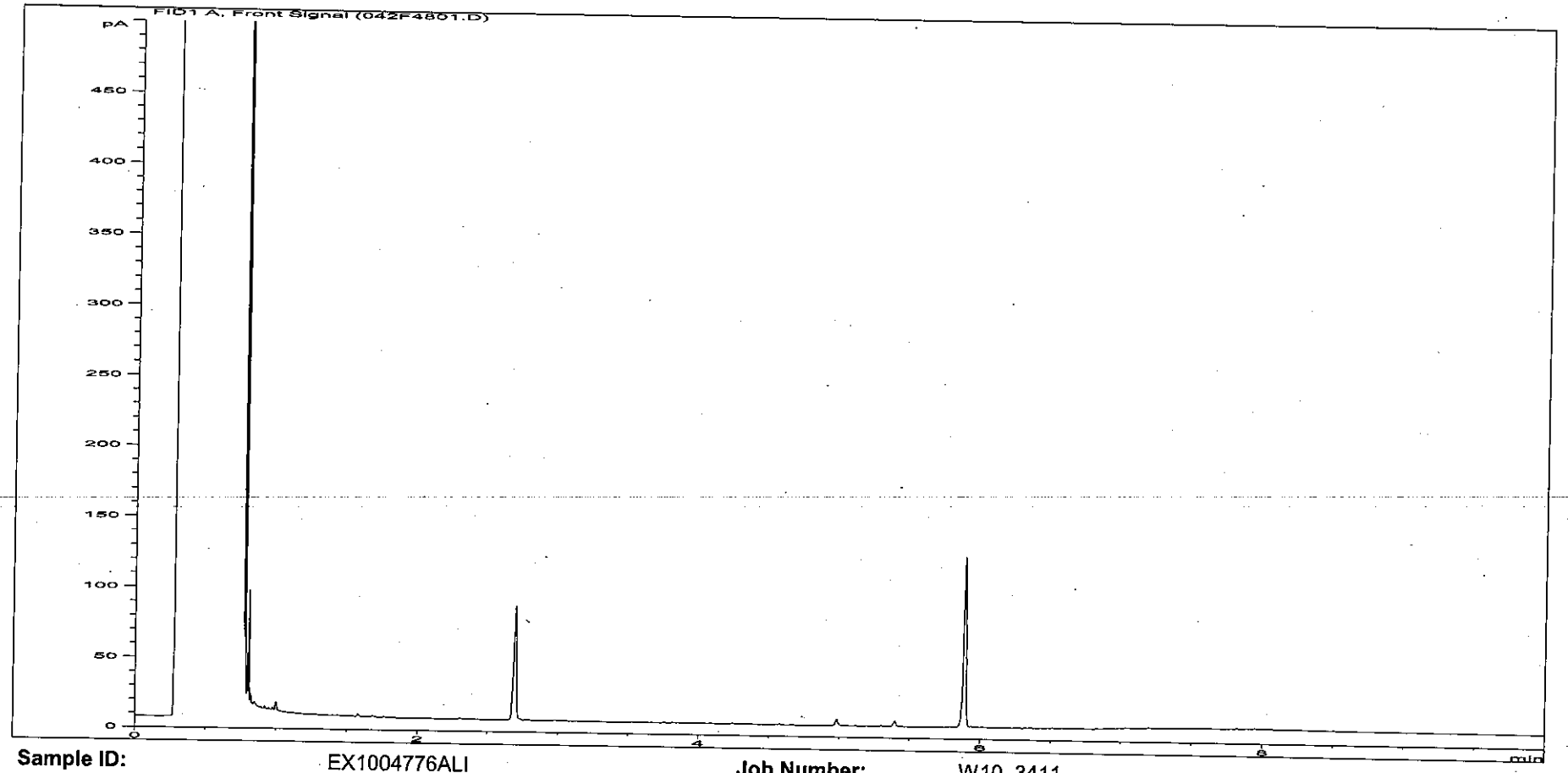
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004775ARO	**Job Number:**	W10_3411
Multiplier:	0.016	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH22
Acquisition Date/Time:	22-Feb-10, 23:32:39		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\089B4701.D		

Where individual results are flagged see report notes for status.

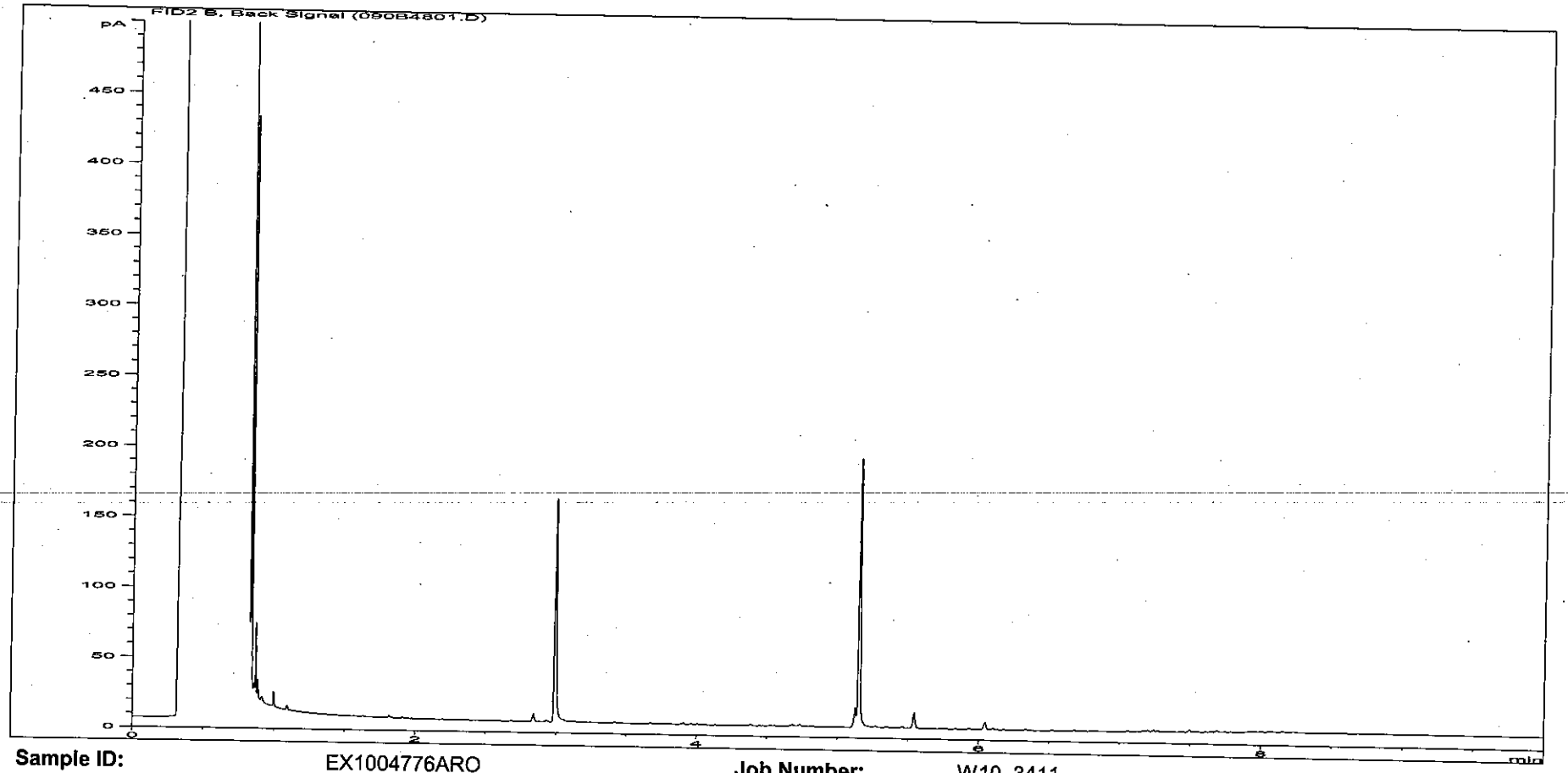
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004776ALI	**Job Number:**	W10_3411
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH23
Acquisition Date/Time:	22-Feb-10, 23:49:59		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\042F4801.D		

Where individual results are flagged see report notes for status.

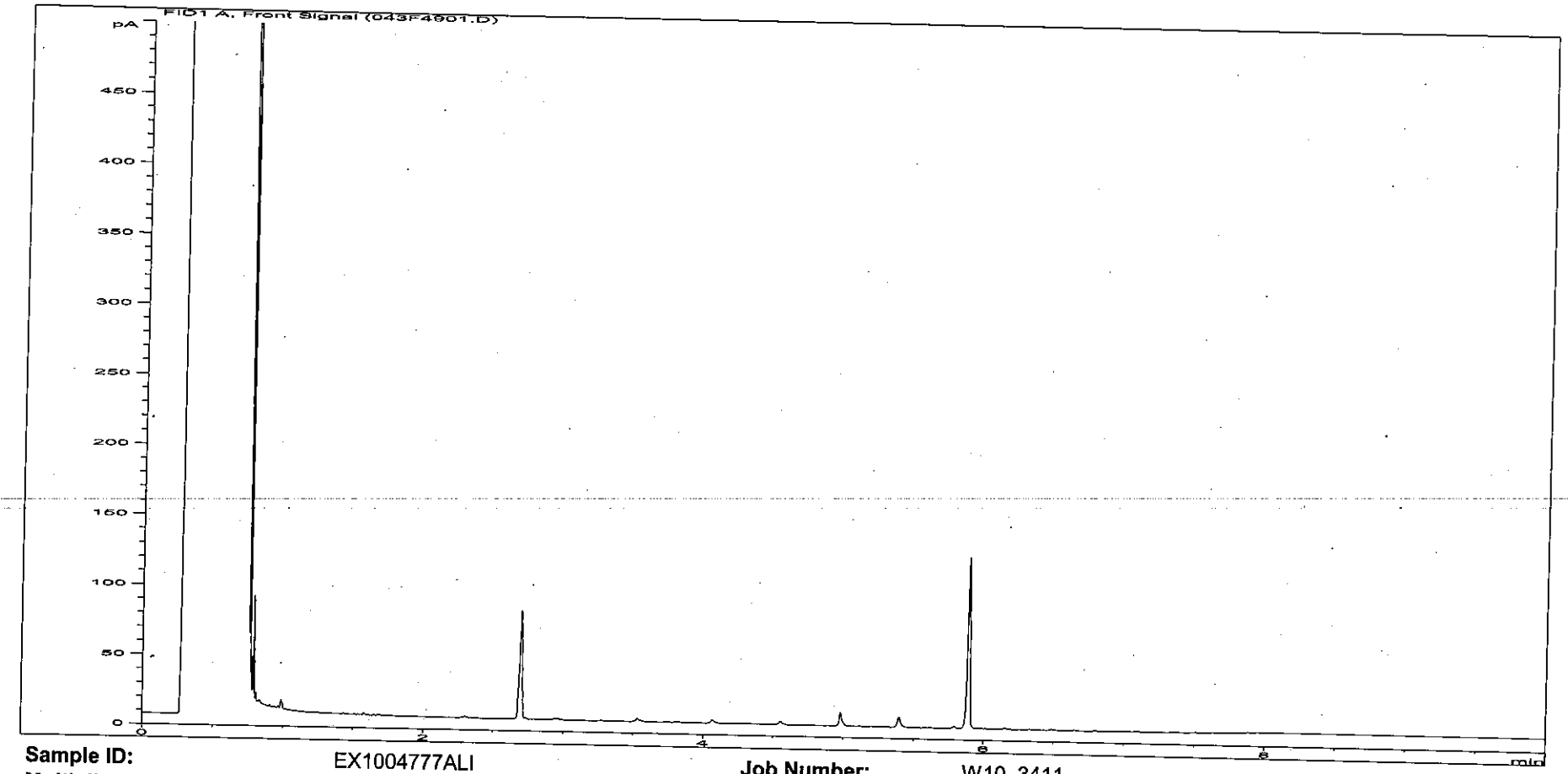
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004776ARO	**Job Number:**	W10_3411
Multiplier:	0.016	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH23
Acquisition Date/Time:	22-Feb-10, 23:49:59		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\090B4801.D		

Where individual results are flagged see report notes for status.

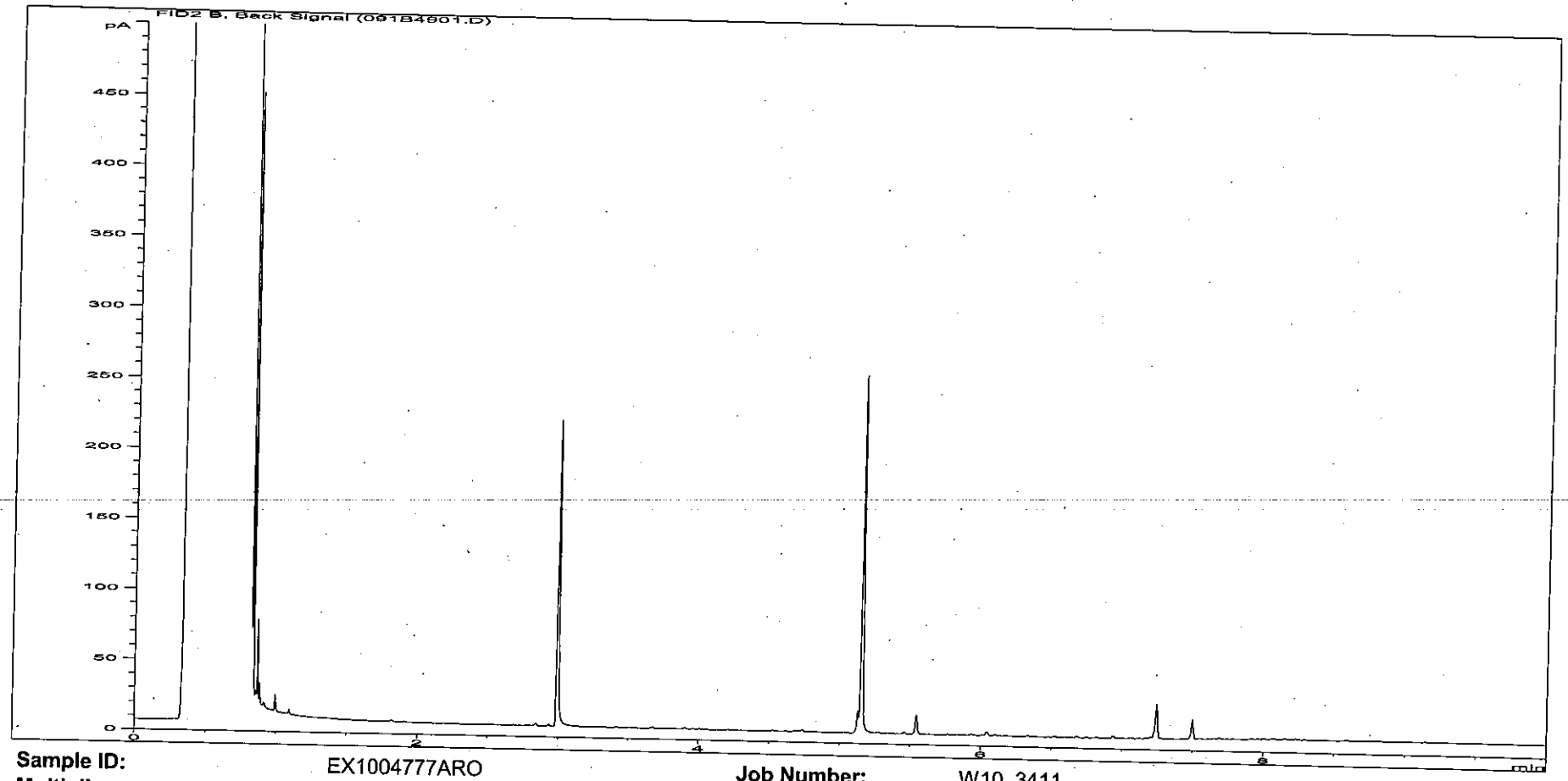
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004777ALI	**Job Number:**	W10_3411
Multiplier:	0.02	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH24
Acquisition Date/Time:	23-Feb-10, 00:07:26		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\043F4901.D		

Where individual results are flagged see report notes for status.

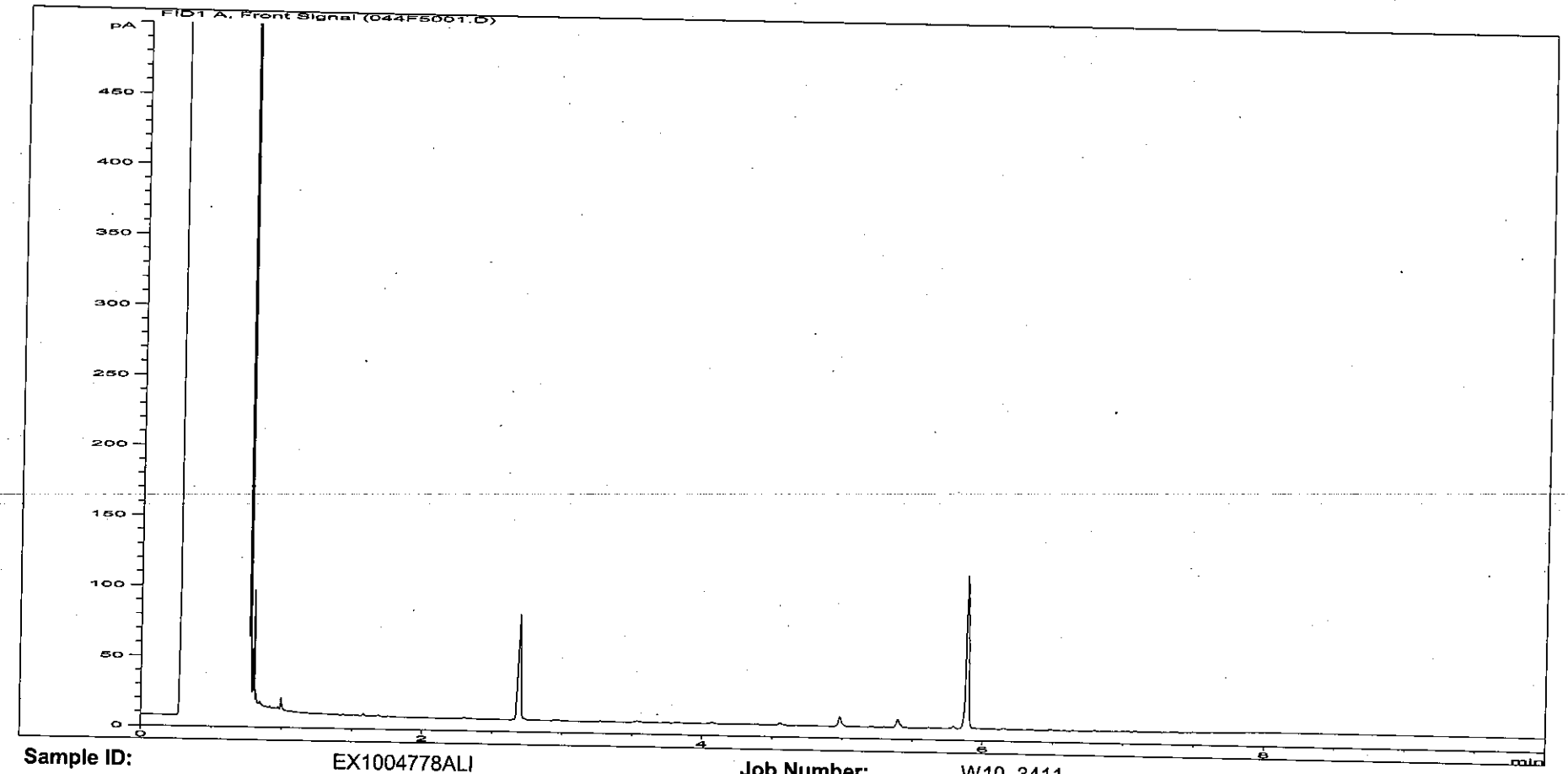
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004777ARO	**Job Number:**	W10_3411
Multiplier:	0.016	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH24
Acquisition Date/Time:	23-Feb-10, 00:07:26		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\091B4901.D		

Where individual results are flagged see report notes for status.

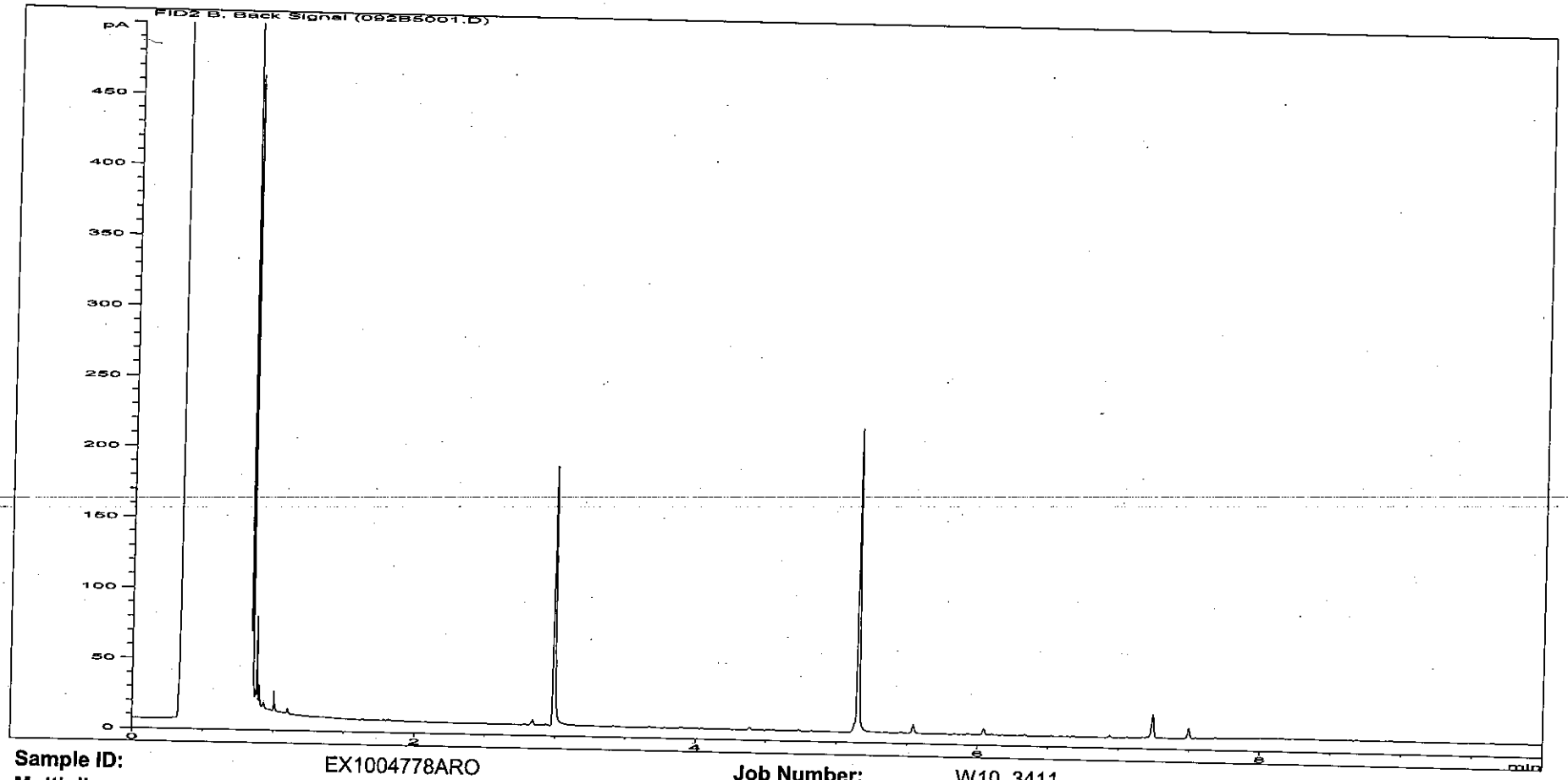
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004778ALI	**Job Number:**	W10_3411
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH25
Acquisition Date/Time:	23-Feb-10, 00:24:48		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\044F5001.D		

Where individual results are flagged see report notes for status.

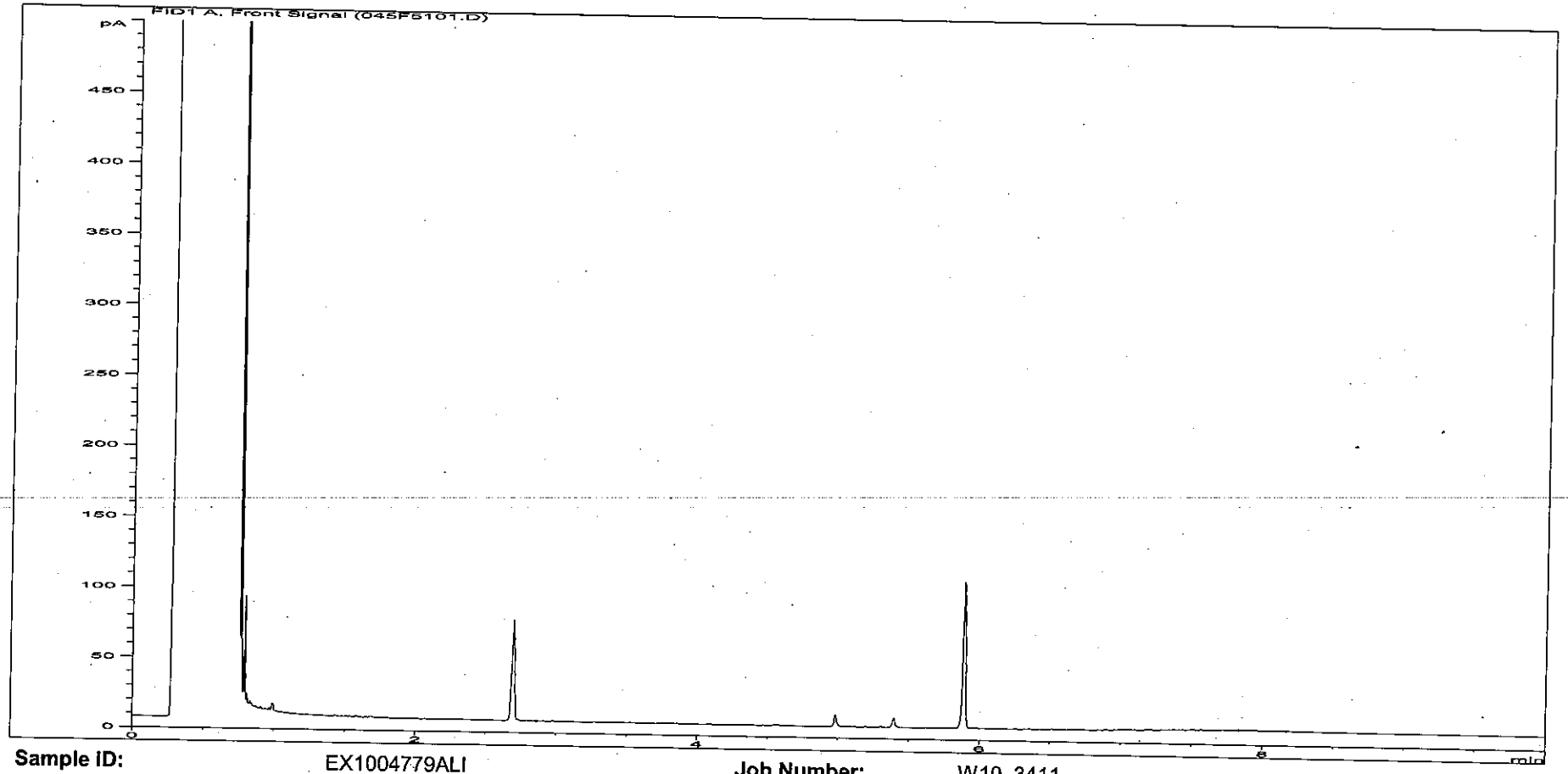
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004778ARO	**Job Number:**	W10_3411
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH25
Acquisition Date/Time:	23-Feb-10, 00:24:48		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\092B5001.D		

Where individual results are flagged see report notes for status.

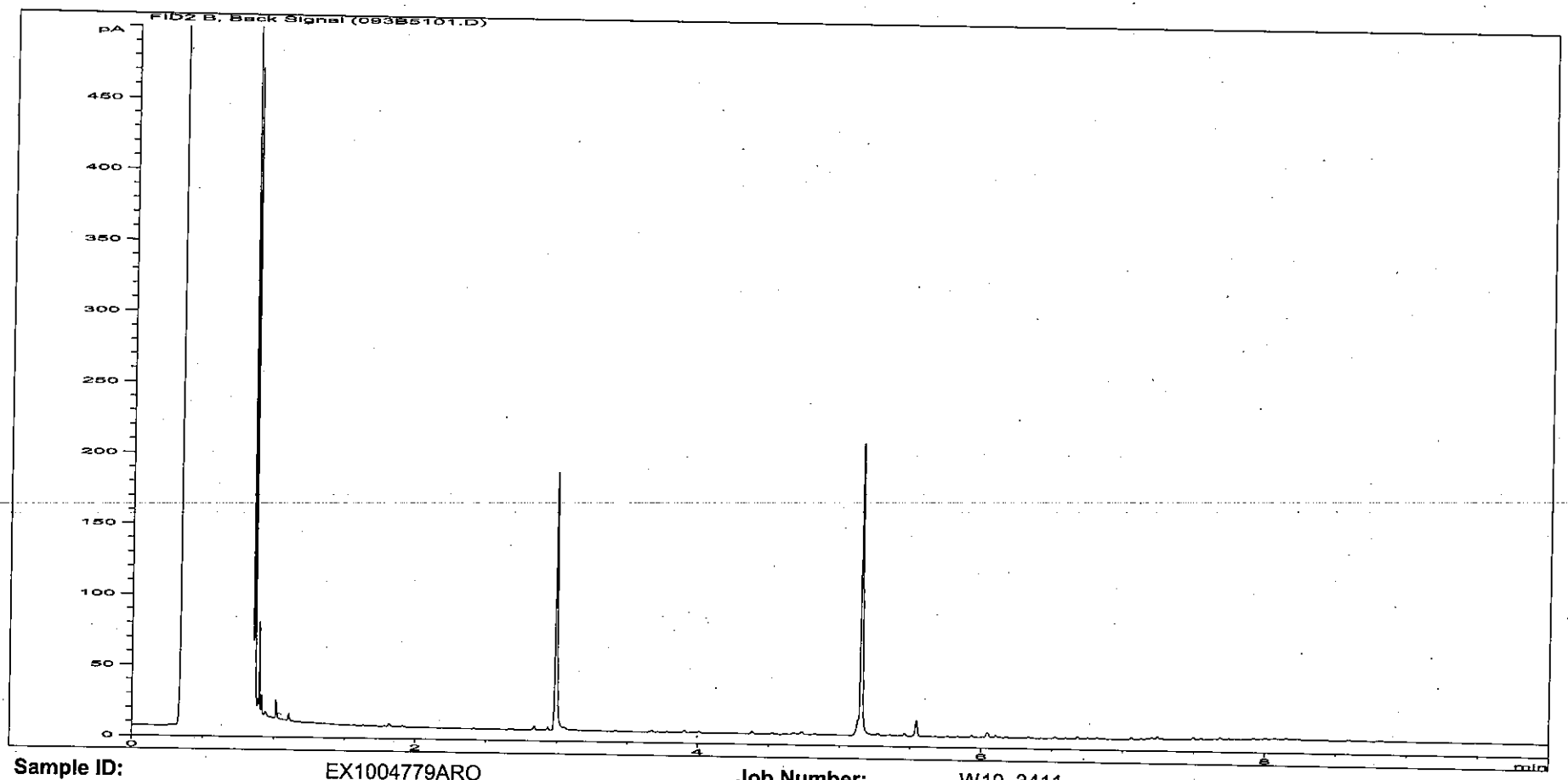
Petroleum Hydrocarbons (C8 to C40) by GC/FID Aliphatics Fraction.



Sample ID:	EX1004779ALI	**Job Number:**	W10_3411
Multiplier:	0.019	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH26
Acquisition Date/Time:	23-Feb-10, 00:42:07		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\045F5101.D		

Where individual results are flagged see report notes for status.

Petroleum Hydrocarbons (C8 to C40) by GC/FID Aromatics Fraction.



Sample ID:	EX1004779ARO	**Job Number:**	W10_3411
Multiplier:	0.015	**Client:**	Hyder Consulting Limited
Dilution:	1	**Site:**	LNO1323
Acquisition Method:	TPH_RUNF.M	**Client Sample Ref:**	BH26
Acquisition Date/Time:	23-Feb-10, 00:42:07		
Datafile:	D:\TES\DATA\Y2010\0222TPH_GC16\022210 2010-02-22 09-57-44\093B5101.D		

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on an air dried basis
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite
NADIS Denotes No Asbestos Detected In Sample
NBFO Denotes No Bulk Fibres Observed

Symbol Reference

^ Sub-contracted analysis
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined
N.Det Not detected
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
* All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

END OF REPORT

Where individual results are flagged see report notes for status.

Our Ref: EFS/100786 (Ver. 1)
Your Ref: LNO1323

February 23, 2010

scientifics

Scientifics Ltd
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: [redacted]
Facsimile: 01283 554422

[redacted]
Hyder Consulting UK Ltd
HCL House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

For the attention of [redacted]

Dear [redacted]

SOIL Sample Analysis - LNO1323

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Where appropriate the samples will be kept until 29/03/10 when they will be discarded. Please call 01283 554547 for an extension of this date.
Please be aware that from 1 January 2003 our policy for the retention of paper based laboratory records and analysis reports will be 6 years.

The work was carried out in accordance with Scientifics Ltd Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for Scientifics

[redacted]

[redacted]
Project Co-ordinator
[redacted]

TEST REPORT
SOIL SAMPLE ANALYSIS

UKAS TESTING
1252

Report No. EFS/100786 (Ver. 1)

Hyder Consulting UK Ltd
HCL House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

Site: LNO1323

The 15 samples described in this report were logged for analysis by Scientifics on 15-Feb-2010.
The analysis was completed by: 23-Feb-2010

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited
Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by Scientifics Ltd.

The following tables are contained in this report:

On behalf of
Scientifics :
Jane Colbourne [redacted]
Project Co-ordinator

Date of Issue: 23-Feb-2010

Tests marked '^' have been subcontracted to another laboratory.

Scientifics Ltd accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg			
Method Codes :		ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	ICPMSS	PAHMSUS	PAHMSUS	TMSS	TPHFIDUS	TPHFIDUS			
Method Reporting Limits :		0.5	0.1	0.5	0.5	0.5	0.10	0.5	0.5	3.0	0.08	0.08	0.2	10.0	10.0			
UKAS Accredited :		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes			
Laboratory ID Number CL/	Client Sample Description	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	PAH by MS.16(0.08)	PAH by MS.17(0.08)	Tot.Moisture @ 105C	TPH by GCFID (AR)	TPH Carbon Banding.			
1003532	BH20 0.75	28.9	45.09	183.2	34500	4839	0.14	216.6	3.6	14950	Req		25.4	363	Req			
1003533	BH23 0.5	6.7	2.13	36.7	319.6	85.2	<0.1	47	0.7	397.7	Req		19.4	78	Req			
1003534	TP20 0.5	17.8	4.5	47.2	288.7	206.3	0.12	91.3	0.7	914.3		Req	25.9	94	Req			
1003535	TP20 1.2	4.9	0.19	59.4	23.8	12.7	<0.1	59.9	<0.5	91.4	Req			19	Req			
1003536	TP21 0.5	8.5	0.46	49.6	50.6	42.1	<0.1	43.7	<0.5	148.5	Req		26.6	62	Req			
1003537	TP22 1.2	7.0	0.16	40.1	39.6	14.8	<0.1	39.2	0.5	79	Req		25.6	35	Req			
1003538	TP24 0.5	7.2	0.36	29.4	37.8	55.5	<0.1	28.5	<0.5	118.7	Req		15.3	511	Req			
1003539	TP25 1.2	8.0	1.3	38.6	380.1	66.6	<0.1	42.9	<0.5	452.3		Req	18.1	102	Req			
1003540	TP25 2.0	6.2	0.13	48.7	23.2	12.0	<0.1	48	<0.5	90.5	Req			20	Req			
1003541	TP26 0.5	20.8	17.8	71.2	1752	306.5	0 22	147.7	1.9	2340	Req		33.2	125	Req			
1003542	TP27 0.3	16.8	1.2	48.5	158.1	77.2	<0.1	47.7	1.1	200.8	Req		19.1	403	Req			
1003543	TP27 1.85	7.1	0.11	47.9	43.5	8.7	<0.1	44.2	<0.5	80.2	Req			12.0	Req			
1003544	TP28 0.5	5.8	0.11	51	18.4	12.6	<0.1	45.6	<0.5	74.5	Req		18.5	<10.0	Req			
1003545	TP28 2.9	5.6	<0.1	70.9	13.4	7.0	<0.1	64.4	<0.5	83.1	Req			<10.0	Req			
1003546	TP29 0.5	7.1	0.14	38.8	28.5	13.7	<0.1	37.6	<0.5	80.5	Req		17.5	105	Req			

scientifics
Bretby Business Park, Ashby Road
Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Client Name Hyder Consulting UK Ltd

Contact [redacted]

Soils Sample Analysis

LNO1323

Date Printed	23-Feb-10
Report Number	EFS/100786
Table Number	1

Where individual results are flagged see report notes for status.

Units :	% M/M	ug/kg	pH Units		% M/M	ug/kg	ug/kg	ug/kg	ug/kg							
Method Codes :	FOCS	PCBUSECD	PHSOIL	SEN9	WSLM59	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA							
Method Reporting Limits :	0.04	5			0.01	10	10	10	20							
UKAS Accredited :	no	no	no	no	no	yes	yes	yes	yes							

Laboratory ID Number CL/	Client Sample Description	S.O.M. % (Calc)	PCB (7 Congeners)	pH units (AR)	Asbestos (screening)	Total Organic Carbon	Benzene	Toluene	Ethyl Benzene	Xylenes							
1003532	BH20 0.75			8.2													
1003533	BH23 0.5	6.05		7.8	NBFO	3.51											
1003534	TP20 0.5		Req	8.1		7.86	<10	<10	<10	<20							
1003535	TP20 1.2	0.83		8.2		0.48											
1003536	TP21 0.5	5.40		7.7		3.13											
1003537	TP22 1.2			8.2	NBFO												
1003538	TP24 0.5			8.3	NBFO												
1003539	TP25 1.2		Req	8.7		1.69	<10	<10	<10	<20							
1003540	TP25 2.0	0.97		8.2		0.56											
1003541	TP26 0.5			8.3	NBFO												
1003542	TP27 0.3			8.6													
1003543	TP27 1.85			8.5													
1003544	TP28 0.5			8.8	NBFO												
1003545	TP28 2.9	0.33		8.9		0.19											
1003546	TP29 0.5	1.24		9.0		0.72											

scientifics
Bretby Business Park, Ashby Road
Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Client Name Hyder Consulting UK Ltd

Contact [redacted]

LNO1323

Soils Sample Analysis

Date Printed	23-Feb-10
Report Number	EFS/100786
Table Number	1

Where individual results are flagged see report notes for status.

Polycyclic Aromatic Hydrocarbons
GC/MS (SIM)

Customer and Site Details:	Hyder Consulting UK Ltd: LNO1323		
Sample Details:	BH20 0.75	**Job Number:**	S10_0786
LIMS ID Number:	CL1003532	**Date Booked in:**	15-Feb-10
QC Batch Number:	0499	**Date Extracted:**	19-Feb-10
Quantitation File:	Initial Calibration	**Date Analysed:**	19-Feb-10
Directory:	\0219PAHGC5\	**Matrix:**	Soil
Dilution:	1.0	**Ext Method:**	Ultrasonic

UKAS accredited?: Yes

Target Compounds	CAS #	R.T. (min)	Concentration mg/kg	% Fit
Naphthalene	91-20-3	-	< 0.08	-
Acenaphthylene	208-96-8	-	< 0.08	-
Acenaphthene	83-32-9	-	< 0.08	-
Fluorene	86-73-7	-	< 0.08	-
Phenanthrene	85-01-8	5.69	0.08	85
Anthracene	120-12-7	-	< 0.08	-
Fluoranthene	206-44-0	7.03	0.14	88
Pyrene	129-00-0	7.31	0.13	98
Benzo[a]anthracene	56-55-3	9.00	0.09	83
Chrysene	218-01-9	9.04	0.10	81
Benzo[b]fluoranthene	205-99-2	10.53	0.17	81
Benzo[k]fluoranthene	207-08-9	-	< 0.08	-
Benzo[a]pyrene	50-32-8	10.96	0.11	97
Indeno[1,2,3-cd]pyrene	193-39-5	12.33	0.12	93
Dibenzo[a,h]anthracene	53-70-3	-	< 0.08	-
Benzo[g,h,i]perylene	191-24-2	12.63	0.14	77
Total (USEPA16) PAHs	-	-	< 1.64	-

"M" denotes that % fit has been manually interpreted

Internal Standards	% Area
1,4-Dichlorobenzene-d4	NA
Naphthalene-d8	83
Acenaphthene-d10	82
Phenanthrene-d10	77
Chrysene-d12	78
Perylene-d12	78

Surrogates	% Rec
Nitrobenzene-d5	NA
2-Fluorobiphenyl	101
Terphenyl-d14	110

Concentrations are reported on a wet weight basis.

The Total PAH result is the sum of non-rounded individual PAH results and therefore may differ to the sum of the rounded individual PAH results printed above. By convention, where any one or more result is a "less than", the total is expressed as a "less than" and includes the "less than" concentration within the total.

Where individual results are flagged see report notes for status.