Cyngor Bwrdeisdref Sirol
Blaenau Gwent
County Borough Council

Local Air Quality Review And Assessment

Air Quality Progress Report 2011

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

Environment Directorate
Public Protection Division
Environmental Health Section

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Executive Summary

This progress report is the latest in a series of reports relating to air quality and has been compiled and published by Blaenau Gwent County Borough Council (hereafter referred to as Blaenau Gwent CBC). The report contains the latest air quality data for the calendar year of 2010 applicable to the County Borough, and provides current information relating to any new local developments or issues that may have an impact on air quality.

The UK's National Air Quality Strategy sets air quality objectives for seven key pollutants which Local Authorities are legally required to have regard to. These include Benzene, 1,3 Butadiene, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter (PM_{10}) (gravimetric) and Sulphur Dioxide.

Local authorities are obliged to periodically review the air quality within their area to determine the risk of the air quality objectives set out in the national strategy being exceeded. If a Local Authority identifies a risk of any of the objectives being exceeded within its area then they must proceed to a Detailed Assessment for that pollutant.

The previous reports produced by Blaenau Gwent CBC have concluded that it is unlikely that any of the air quality objectives that the Council are required to have regard to, are being exceeded or will be exceeded within the Borough and therefore no Detailed Assessment for any pollutant has been carried out to-date.

This 2011 Air Quality Progress Report **does not** identify the need for Blaenau Gwent CBC to proceed to a Detailed Assessment for any of the seven pollutants identified in the UK's National Air Quality Strategy.

The next Updating and Screening Assessment for Air Quality within the Borough of Blaenau Gwent is scheduled to be published in April 2012.

Further information regarding the UK's National Air Quality Strategy is available at

http://www.airquality.co.uk

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1.0 Introduction

1.1 Description Of Local Authority Area

The County Borough of Blaenau Gwent is located in South East Wales and was formerly part of the County of Gwent. It is approximately 20 miles south to the city of Newport, 30 miles south west to the City of Cardiff and directly north is the Brecon Beacons National Park.

Blaenau Gwent is the smallest of all the Welsh Local Authorities, at about 10,900 hectares. There are three distinctive valleys supporting the five main towns or settlements of Abertillery, Brynmawr, Ebbw Vale, Nantyglo and Blaina, and Tredegar.

Although the towns give the County Borough a busy, urban feel, Blaenau Gwent is actually a largely rural area. Forty five per cent of the land area is undeveloped, and the greater part of this is defined as open countryside.

The Borough has witnessed steady population loss over recent years. The most recent figures suggest that there are 68,400 people living in the area. This compares to 70,064 in 2001, and 69,300 in 2010 (Censuses).

The main trunk route that runs through the County Borough is the A465, Heads of the Valleys road which provides good communication to the Midlands and the North via the M50/M5 and to London via the M4.

Much of the traditional coal and steel industry that historically populated the Borough has been replaced by a diverse industrial base comprising of businesses such as pharmaceuticals, battery and computer systems, electronic and high tech engineering companies. The closure of much of the heavy industry in the area has had an adverse impact on the local economy but conversely it has meant the removal of significant sources of air pollution.

Blaenau Gwent has experienced enormous regeneration investment in recent years, with much more to come. Major projects like the re-opening of the Ebbw Valley railway and the re-development of the former Corus steelworks site in Ebbw Vale will transform the face of the borough.

The map provided in Appendix 1 to this report outlines the administrative area of Blaenau Gwent.

1.2 Purpose Of This Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process. The last Updating and Screening Assessment report was carried out by Blaenau Gwent CBC in 2009.

The Progress Reports are not intended to be as detailed as the Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedance of an Air Quality Objective, the Local Authority should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

To-date none of the reports produced by Blaenau Gwent CBC have identified the need to progress to a Detailed Assessment for Air Quality and therefore there are no declared Air Quality Management Areas with the County Borough.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in Wales** are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298), and are shown in Table 1.1.

This table shows the objectives in units of microgrammes per cubic metre $\mu g/m^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

Table 1.1 - Air Quality Objectives Included In Regulations For The Purpose Of Local Air Quality Management In Wales.

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide (NO_2)	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary Of Previous Review And Assessments

Table 1.2 provides a comprehensive list of the reports produced by Blaenau Gwent CBC as a result of previous rounds of review and assessment of the air quality within the Borough, and summarises the main findings of each report.

Table 1.2 - Reports Produced By Blaenau Gwent CBC As A Result Of Previous Rounds Of Local Air Quality Review And Assessment

Report	Review And Assessment Undertaken & Conclusions	Year Published
1999 First Stage Review and Assessment	Initial screening of industrial, transport and other significant sources of air pollution within the Borough. Concluded that it is unlikely that there will be failure to achieve any of the air quality objectives.	1999
2003 Updating and Screening Assessment	In-depth review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2003
2004 Progress Report	Review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2004
2005 Progress Report	Review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2005
2006 Updating and Screening Assessment	In-depth review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2006
2007 Progress Report	Review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2007
2008 Progress Report	Review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2008
2009 Updating and Screening Assessment	In-depth review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2009
2010 Progress Report	Review of any matters which may have changed since the last review and assessment which may lead to a risk of an air quality objective being exceeded. Concluded no significant changes and therefore unlikely that there will be failure to achieve any of the air quality objectives.	2010

All reports produced from 2004 onwards are available to download and view free of charge at the Blaenau Gwent CBC website:
http://www.blaenau-gwent.gov.uk/environment/2774.asp

Copies of earlier reports are available from Blaenau Gwent CBC Environmental Health Section.

2.0 New Monitoring Data

2.1 Summary Of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Blaenau Gwent CBC does not currently undertake any automatic monitoring of any of the pollutants relevant to the UK National Air Quality Objectives.

However, there was an automatic monitoring station within the Borough which was undertaking monitoring for ambient levels of Lead, PM_{10} and $PM_{2.5}$ at a special source orientated site. Monitoring was required at the site for a minimum period of 12 months during 2008/09. Monitoring at this site has now completed.

The monitoring station was located at Garnlydan Primary School, Ebbw Vale and was run by Environmental Compliance Ltd on behalf of Envirowales Ltd. Envirowales Ltd is a lead acid battery recycling plant sited at the Rassau Industrial Estate, Ebbw Vale which was given planning permission on 21st June 2005.

The provision of the monitoring station arose as a result of compliance with the requirements of a formal agreement between Envirowales Ltd and Blaenau Gwent CBC under Section 106 of the Town and Country Planning Act as previously reported in the 2008 Progress Report (Pg 37/38).

The monitoring site location was selected as it was considered to be one of the nearest sites of relevant exposure to emissions from the processes being undertaken at Envirowales Ltd. A map indicating the location of the monitoring site was provided in Appendix 2 of the 2010 Progress Report.

It was agreed that monitoring would commence at a time when the site had become fully operational and as a result monitoring began in September 2008. The monitoring station was routinely calibrated on a monthly basis, audits of the site were carried out in conjunction with the routine calibration exercises. A summary of the information relevant to the automatic monitoring station was provided in the 2010 Progress Report (Table 2.1).

Reports were provided to the Local Authority by Environmental Compliance Ltd every three months from date of commencement of the monitoring exercise. The outline of the methodology used for monitoring and analysis (including quality assurance and controls used) and the results obtained were provided in each report supplied to Blaenau Gwent CBC. A copy of each of the reports were provided in Appendix 3 to the 2010 Progress Report.

The automatic monitoring undertaken at the site **did not** indicate any exceedence or likely exceedence of the Air Quality Objectives for Lead, PM_{10} and $PM_{2.5}$ at a level for which a Detailed Assessment would be necessary.

2.1.2 Non- Automatic Monitoring

Blaenau Gwent CBC undertook diffusion tube monitoring at 19 sites throughout the Borough during 2010, the details of which are presented in Table 2.1. A map indicating the approximate location of each current monitoring site is provided in Appendix 2 to this report.

The diffusion tubes are exposed for four week periods in accordance with the National NO_2 exposure calendar.

Two laboratories are used to analyse and provide data from the NO_2 diffusion tube monitoring. This is due to an historical arrangement where the four of the nineteen sites namely, BGBC1,3,4 and 9, were originally part of a national survey and the remainder were locally determined monitoring sites. With the demise of the national survey the same arrangements have been maintained for future years of monitoring. There are proposals to move to one laboratory for analysis in the future and an update on the position with this will be provided within the 2012 Updating and Screening Assessment.

Harwell Scientifics is the laboratory used for the four former national survey sites (BGBC - 1,3,4 and 9), and the laboratory used for the remaining sites is Cardiff Scientific Services, both use the 50% TEA in Acetone method to prepare the diffusion tubes for analysis.

Both laboratories have indicated that they are following the procedures set out in the Harmonisation Practical Guidance.

It has also been confirmed that both laboratories demonstrated satisfactory performance in both the WASP scheme (run by the Health and Safety Laboratory) and the monthly field inter-comparison exercise run by AEA or own co-location study for the period of 2010.

Blaenau Gwent CBC does not currently undertake a co-location study for its NO_2 diffusion tube monitoring and so the 'National' bias adjustment factor has been used for the results of the monitoring undertaken during the period of 2010. The 'National' bias adjustment factor was taken from the spreadsheet provided on the Air Quality Review and Assessment Helpdesk Website (http://laqm.defra.gov.uk/)

The bias adjustment factors that were applied are outlined below:

- Harwell Scientifics – bias adjustment factor of 0.85 for 2010
- Cardiff Scientific Services - bias adjustment factor of 0.85 for 2010

A full audit of all monitoring sites used by Blaenau Gwent CBC was undertaken during 2009 and as a result minor amendments to the descriptors for some of the sites was carried out and some additional information was provided with regards to all sites.

In addition to the above it was identified as a result of the audit that some of the monitoring locations were no longer required as they were no longer representative of the areas being monitored due to local changes. A number of new sites were also identified as a result of the information obtained during the audit and the Updating and Screening Assessment process carried out in 2009.

So that the ongoing monitoring for 2009 would not be interrupted it was decided that the existing sites would continue until the end of the calendar year for 2009. The new monitoring locations would commence in January 2010 and the redundant sites would cease monitoring at the end of 2009.

The sites which were made redundant at the end of the calendar year for 2009 were BGBC-10 and BGBC-15. Four new monitoring locations were identified in total and these commenced operation in January 2010. The new sites are BGBC-23, 24, 25 and 26.

Table 2.1 Details Of Non - Automatic Monitoring Sites For 2010

Site Name	LA Reference	Site Type	Location	Easting (X) / Northing (Y)	OS Grid Map Reference	Pollutants Monitored	Within AQMA?	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Height between 2 to 4 m? (Y/N)	Distance to kerb of nearest road *(N/A if not applicable)*	Worst-case Location ?	WAQF Start Date	WAQF End Date
BGBC-01	S1	Near Road	The Darren, Daren-felen Road, Brynmawr	X 319538 Y 211956	SO1911NE	NO_2	N	Y (on facade)	Y	8m	Y	Jan 1995	N/A
BGBC-03	S3	Urban Background	272 King Street, Brynmawr	X 319292 Y 212030	SO1912SE	NO_2	N	Y (on façade)	Y	4m	Y	Jan 1995	N/A
BGBC-04	S4	Urban Background	22 Parkhill, Beaufort, Ebbw Vale	X 317298 Y 211287	SO1711SW	NO_2	N	Y (10m)	Y	N/A	N/A	Jan 1995	N/A
BGBC-05	A3	Urban Background	Willow Tree Bungalow, Aberbeeg	X 321139 Y 201114	SO2101SW	NO_2	N	Y (1m)	Y	10m	N/A	Jan 1995	N/A
BGBC-07	A1	Urban Background	Aberbeeg Medical Centre, Aberbeeg	X 320942 Y 202011	SO2002SE	NO_2	N	Y (18m)	Y	25m	N/A	Nov 1995	N/A
BGBC-09	S2	Near Road	Ynys Dawel, Daren-felen Road, Brynmawr	X 319556 Y 211980	SO1911NE	NO_2	N	Y (7m)	Y	33m	Y	Jan 2001	N/A
BGBC-11	C2	Urban Background	8 Cwm Graig Bungalows, Marine Street, Cwm, Ebbw Vale	X 318785 Y 204592	SO1804NE	NO_2	N	Y (on facade)	Y	18m	N/A	Jan 2000	N/A
BGBC-13	T2	Roadside	3 Kings Arms Cottages, Trefil, Tredegar	X 312012 Y 212782	SO1212NW	NO_2	N	Y (on facade)	Y	4m	Y	Oct 2000	N/A
BGBC-16	A5	Near road	49 Aberbeeg Road, Aberbeeg	X 321430 Y 202672	SO2102NW	NO_2	N	Y (on façade)	Y	7m	Y	Oct 2005	N/A
BGBC-17	C3	Near road	Cwmyrdderch Court, School Terrace, Cwm, Ebbw Vale	X 318429 Y 205535	SO1805NW	NO_2	N	Y (5m)	Y	7m	Y	Oct 2005	N/A
BGBC-18	BT1	Roadside	Welfare Hall, Beaufort Hill, Ebbw Vale	X 317543 Y 211688	SO1711NE	NO_2	N	Y (on façade)	Y	5m	Y	Oct 2005	N/A
BGBC-19	BT2	Roadside	42 Beaufort Rise, Ebbw Vale	X 316670 Y 211597	SO1611NE	NO_2	N	Y (on facade)	Y	3m	Y	Oct 2005	N/A
BGBC-20	TR1	Roadside	122 Beaufort Road, Tredegar	X 314858 Y 210240	SO1410SE	NO_2	N	Y (on façade)	Y	5.5m	Y	Oct 2005	N/A

Table 2.1 Details Of Non - Automatic Monitoring Sites For 2010 (Continued)

Site Name	LA Reference	Site Type	Location	Easting (X) / Northing (Y)	OS Grid Map Reference	Pollutants Monitored	Within AQMA?	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Height between 2 to 4 m? (Y/N)	Distance to kerb of nearest road *(N/A if not applicable)*	Worst-case Location ?	WAQF Start Date	WAQF End Date
BGBC-21	TR2	Other - Nearest residential premises to busy roundabout on Heads of Valley Road (A465)	14 Bryn Rhosyn, Merthyr Road, Tredegar	X 312846 Y 210586	SO1210NE	NO_2	N	Y (on façade)	Y	35m	Y	Oct 2005	N/A
BGBC-22	BR1	Near road	2 King Street, Brynmawr	X 319562 Y 212128	SO1912SE	NO_2	N	Y (on façade)	Y	6m	Y	Nov 2005	N/A
BGBC-23	C4	Near road	Cwm Conservative Club, Mill Terrace, Cwm	X 318453 Y 205308	SO1805SW	NO_2	N	Y (on façade)	Y	6m	Y	Jan 2010	N/A
BGBC-24	T5	Roadside	4 Glen View, Nantybwch, Tredegar	X 313145 Y 210769	SO1310NW	NO_2	N	Y (on façade)	Y	5m	Y	Jan 2010	N/A
BGBC-25	E1	Near road	Red Rose Care Centre, Park Road, Ebbw Vale	X 316996 Y 207898	SO1607NE	NO_2	N	Y (on façade)	Y	8m	Y	Jan 2010	N/A
BGBC-26	E2	Other – near road where this is an increase in traffic expected due to major works nearby	2 The Dingle, Ebbw Vale	X 316980 Y 209842	SO1609NE	NO_2	N	Y (on façade)	Y	10m	Y	Jan 2010	N/A

2.2 Comparison Of Monitoring Results With Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Blaenau Gwent CBC does not currently undertake any automatic monitoring for Nitrogen Dioxide.

Diffusion Tube Monitoring Data

A summary of the results obtained from the Nitrogen Dioxide diffusion monitoring undertaken at the 19 sites within the Borough for the period of 2010 is presented in Table 2.2. Full details of the monthly mean values for each site are provided in Appendix 3 to this report.

Table 2.2 Results Of Nitrogen Dioxide Diffusion Tubes For 2010

Site Name	Location	Within AQMA?	Data Capture 2010 %	Annual Mean Concentrations 2010 (μg/m^3) Adjusted for bias	Air Quality Objective Annual Mean for Nitrogen Dioxide (μg/m^3)
BGBC-01	The Darren, Daren-felen Road, Brynmawr	N	91.7	21.8	40
BGBC-03	272 King Street, Brynmawr	N	100	16.7	40
BGBC-04	22 Parkhill, Beaufort, Ebbw Vale	N	100	11.5	40
BGBC-05	Willow Tree Bungalow, Aberbeeg	N	100	17.0	40
BGBC-07	Aberbeeg Medical Centre, Aberbeeg	N	100	19.5	40
BGBC-09	Ynys Dawel, Daren-felen Road, Brynmawr	N	100	23.0	40
BGBC-11	8 Cwm Graig Bungalows, Marine Street, Cwm, Ebbw Vale	N	100	14.5	40
BGBC-13	3 Kings Arms Cottages, Trefil, Tredegar	N	100	6.5	40
BGBC-16	49 Aberbeeg Road, Aberbeeg	N	100	23.5	40
BGBC-17	Cwmyrdderch Court, School Terrace, Cwm, Ebbw Vale	N	100	20.9	40
BGBC-18	Welfare Hall, Beaufort Hill, Ebbw Vale	N	91.7	23.5	40
BGBC-19	42 Beaufort Rise, Ebbw Vale	N	100	23.6	40
BGBC-20	122 Beaufort Road, Tredegar	N	100	26.5	40
BGBC-21	14 Bryn Rhosyn, Merthyr Road, Tredegar	N	100	18.7	40
BGBC-22	2 King Street, Brynmawr	N	100	20.5	40
BGBC-23	Cwm Conservative Club, Mill Terrace, Cwm	N	91.7	19.3	40
BGBC-24	4 Glen View, Nantybwch, Tredegar	N	100	18.7	40
BGBC-25	Red Rose Care Centre, Park Road, Ebbw Vale	N	100	16.7	40
BGBC-26	2 The Dingle, Ebbw Vale	N	100	17.0	40

Figure 1 provides a graphical representation of the 2010 measured levels of Nitrogen Dioxide at each monitoring location in comparison with the Air Quality Objective for this pollutant.

In previous reporting years the 'Nitrogen Dioxide with distance from Roads Calculator' had been used to predict the annual mean Nitrogen Dioxide concentration for receptors that are close to roadside monitoring locations but are further from the kerb than the monitor.

As a result of the audit of the monitoring locations carried out in 2009 it was noted that this calculation would no longer be required at any of the monitoring locations, as all roadside monitors are now located on the facade of the nearest receptor. There are no roadside monitoring locations where the receptor is nearer to the kerb than the monitoring site.

The results provided in Table 2.2 indicate that the Nitrogen Dioxide levels at each of the monitoring sites were considerably below the current Annual Mean Air Quality Objective of 40 $\mu g/m^3$.

Table 2.3 provides a comparison of the results for the period of 2010 with the results of previous years monitoring (where available) for 2006, 2007, 2008 and 2009 as reported in the 2010 Progress Report (Pg 18).

Figure 2 provides a graphical representation of the 2006, 2007, 2008, 2009 and 2010 measured levels of Nitrogen Dioxide at each monitoring location in comparison with the Air Quality Objective for this pollutant. The bias adjustment factors used for each year are as per the information provided in each corresponding report for the year produced by Blaenau Gwent CBC and which are available at:

http://www.blaenau-gwent.gov.uk/environment/2774.asp

Figure 1: Measured levels of Nitrogen Dioxide for 2010 compared with UK AQO

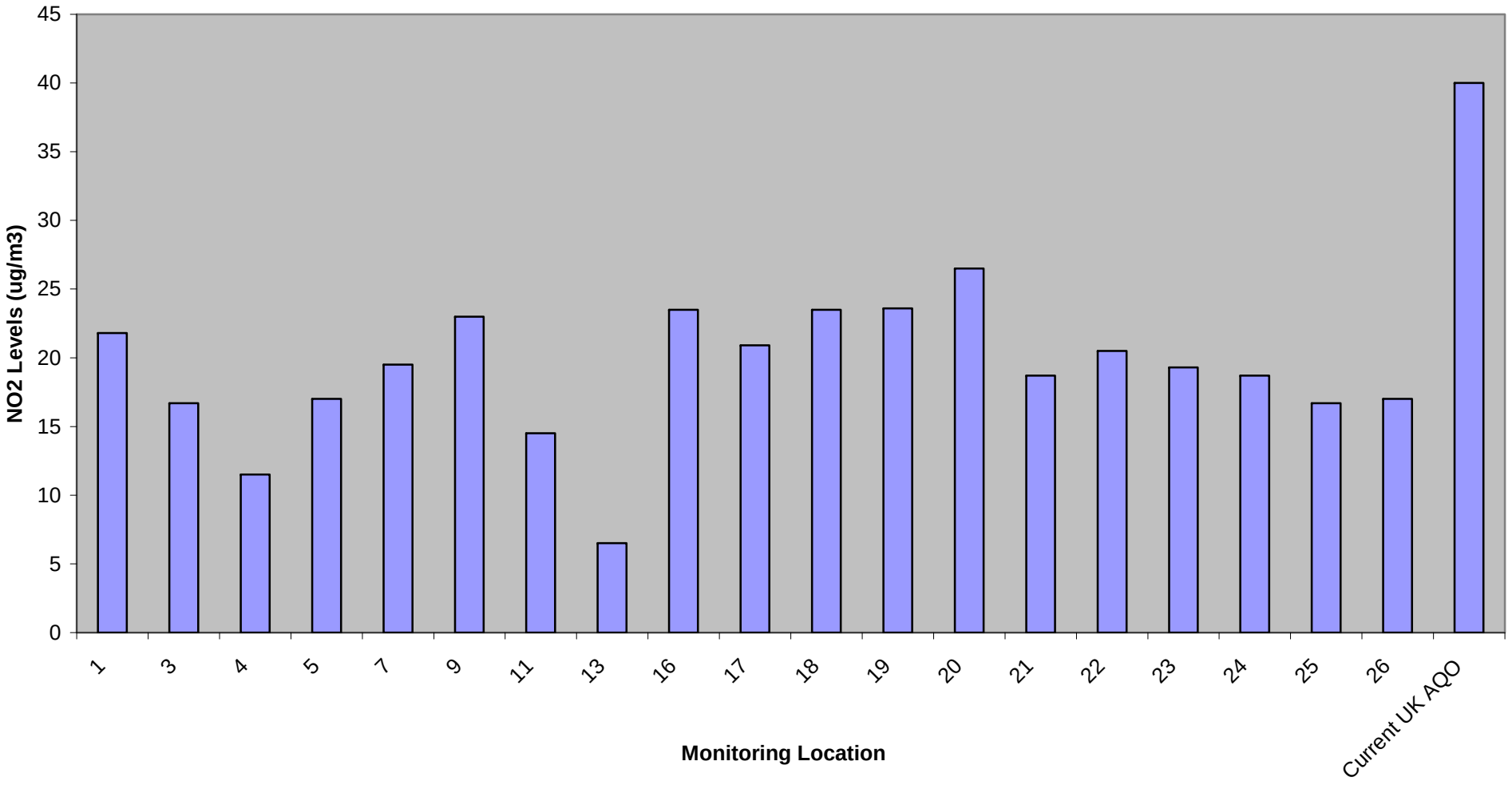
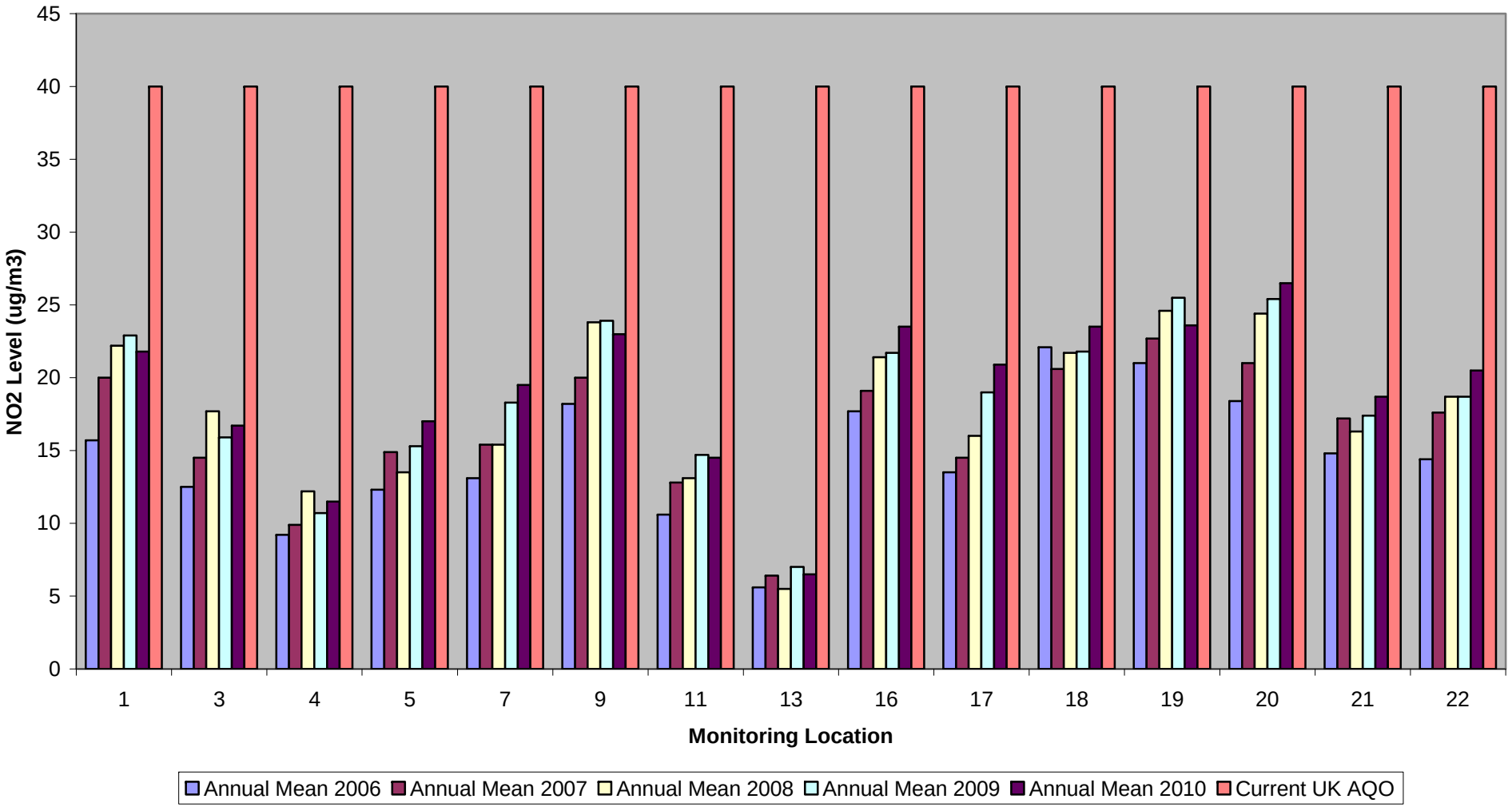


Table 2.3 Results Of Nitrogen Dioxide Diffusion Tubes For 2006, 2007, 2008, 2009 & 2010

Site Name	Location	Annual Mean Concentrations				
		2006 (μg/m^3) Adjusted for bias	2007 (μg/m^3) Adjusted for bias	2008 (μg/m^3) Adjusted for bias	2009 (μg/m^3) Adjusted for bias	2010 (μg/m^3) Adjusted for bias
BGBC-01	The Darren, Daren-felen Road, Brynmawr	15.7	20.0	22.2	22.9	21.8
BGBC-03	272 King Street, Brynmawr	12.5	14.5	17.7	15.9	16.7
BGBC-04	22 Parkhill, Beaufort, Ebbw Vale	9.2	9.9	12.2	10.7	11.5
BGBC-05	Willow Tree Bungalow, Aberbeeg	12.3	14.9	13.5	15.3	17.0
BGBC-07	Aberbeeg Medical Centre, Aberbeeg	13.1	15.4	15.4	18.3	19.5
BGBC-09	Ynys Dawel, Daren-felen Road, Brynmawr	18.2	20.0	23.8	23.9	23.0
BGBC-11	8 Cwm Graig Bungalows, Marine Street, Cwm, Ebbw Vale	10.6	12.8	13.1	14.7	14.5
BGBC-13	3 Kings Arms Cottages, Trefil, Tredegar	5.6	6.4	5.5	7.0	6.5
BGBC-016	49 Aberbeeg Road, Aberbeeg	17.7	19.1	21.4	21.7	23.5
BGBC-017	Cwmyrdderch Court, School Terrace, Cwm, Ebbw Vale	13.5	14.5	16.0	19.0	20.9
BGBC-018	Welfare Hall, Beaufort Hill, Ebbw Vale	22.1	20.6	21.7	21.8	23.5
BGBC-019	42 Beaufort Rise, Ebbw Vale	21.0	22.7	24.6	25.5	23.6
BGBC-020	122 Beaufort Road, Tredegar	18.4	21.0	24.4	25.4	26.5
BGBC-021	14 Bryn Rhosyn, Merthyr Road, Tredegar	14.8	17.2	16.3	17.4	18.7
BGBC-022	2 King Street, Brynmawr	14.4	17.6	18.7	18.7	20.5

Figure 2: Measured levels of Nitrogen Dioxide for 2006, 2007, 2008, 2009 & 2010 compared with current UK AQO



The results indicate that there has been a marginal increase for the period of 2010 in the measured annual mean for Nitrogen Dioxide at ten of nineteen monitoring locations. However, the measured level still remains considerably below the relevant Air Quality Objective.

As can be seen from the results presented in Figure 2 at five of the monitoring locations there has been a reduction for the period of 2010 in the measured annual mean for Nitrogen Dioxide in comparison with the previous years results.

All results at each monitoring location are below the relevant Air Quality Objective.

Table 2.4 provides a comparison of the results for the period of 2010 with the results of previous years monitoring for 2005, 2006, 2007, 2008 and 2009 for the sites where data is available as reported in the 2010 Progress Report (Pg 20).

Table 2.4 Results Of Nitrogen Dioxide Diffusion Tubes For 2005, 2006, 2007, 2008, 2009 & 2010

Site Name	Location	Annual Mean Concentrations					
		2005 ($\mu g/m^3$) Adjusted for bias	2006 ($\mu g/m^3$) Adjusted for bias	2007 ($\mu g/m^3$) Adjusted for bias	2008 ($\mu g/m^3$) Adjusted for bias	2009 ($\mu g/m^3$) Adjusted for bias	2010 ($\mu g/m^3$) Adjusted for bias
BGBC-01	The Darren, Daren-felen Road, Brynmawr	14.5	15.7	20.0	22.2	22.9	21.8
BGBC-03	272 King Street, Brynmawr	12.2	12.5	14.5	17.7	15.9	16.7
BGBC-04	22 Parkhill, Beaufort, Ebbw Vale	7.9	9.2	9.9	12.2	10.7	11.5
BGBC-05	Willow Tree Bungalow, Aberbeeg	12.3	12.3	14.9	13.5	15.3	17.0
BGBC-07	Aberbeeg Medical Centre, Aberbeeg	13.1	13.1	15.4	15.4	18.3	19.5
BGBC-09	Ynys Dawel, Daren-felen Road, Brynmawr	16.6	18.2	20.0	23.8	23.9	23.0
BGBC-11	8 Cwm Graig Bungalows, Marine Street, Cwm, Ebbw Vale	11.5	10.6	12.8	13.1	14.7	14.5
BGBC-13	3 Kings Arms Cottages, Trefil, Tredegar	5.7	5.6	6.4	5.5	7.0	6.5

Figure 3 provides a graphical representation of the 2005, 2006, 2007, 2008, 2009 and 2010 measured levels of Nitrogen Dioxide at each monitoring location in comparison with the Air Quality Objective.

It can be seen from Figures 1, 2 and 3 that the measured Nitrogen Dioxide Levels at each of the monitoring locations for each measurement period are significantly below the current UK Annual Mean Air Quality Objective for Nitrogen Dioxide of 40 $\mu g/m^3$.

Figure 3: Measured levels of Nitrogen Dioxide for 2005, 2006, 2007, 2008, 2009 & 2010 compared with current UK AQO

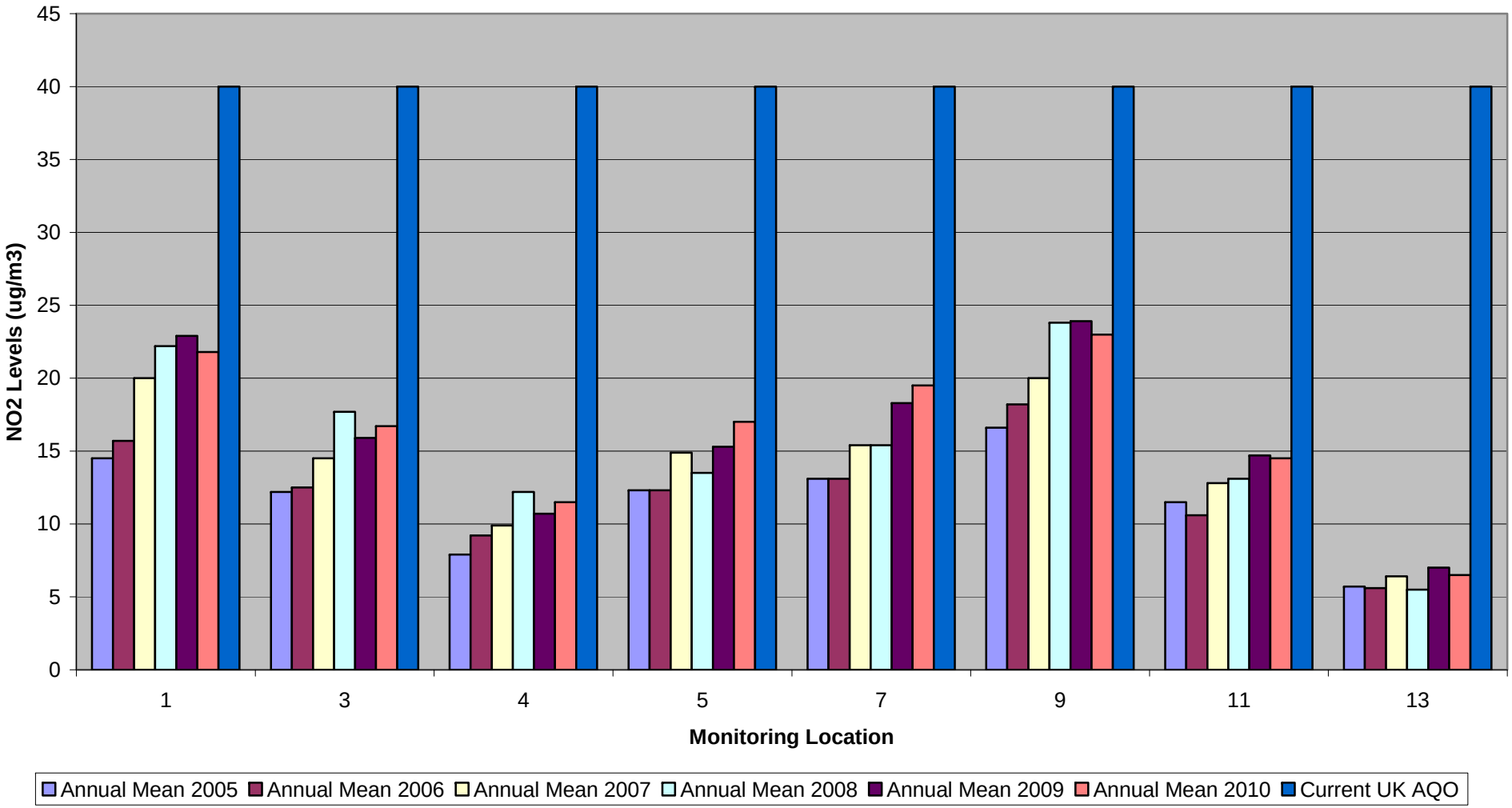


Table 2.5 indicates the projected annual mean for Nitrogen Dioxide at roadside monitoring locations based on the measured levels from 2010 and using the adjustment factors provided in Box 2.1 of the DEFRA Technical Guidance document LAQM.TG(09). Figure 4 illustrates the projected levels graphically.

It can be seen from Figure 4 that the levels at each monitoring location are expected to decrease each year up to and including the year 2020.

The projected results from the 2010 Progress Report, which were based on the measured levels during 2009, have also been compared with the measured results from 2010 with the exception of monitoring site BGBC-24 which is a new monitoring location.

It can be seen from the information provided in Table 2.5 and Figure 4 that the measured results marginally exceed the projected estimates from the 2010 Progress Report (Pg 23) at all monitoring locations.

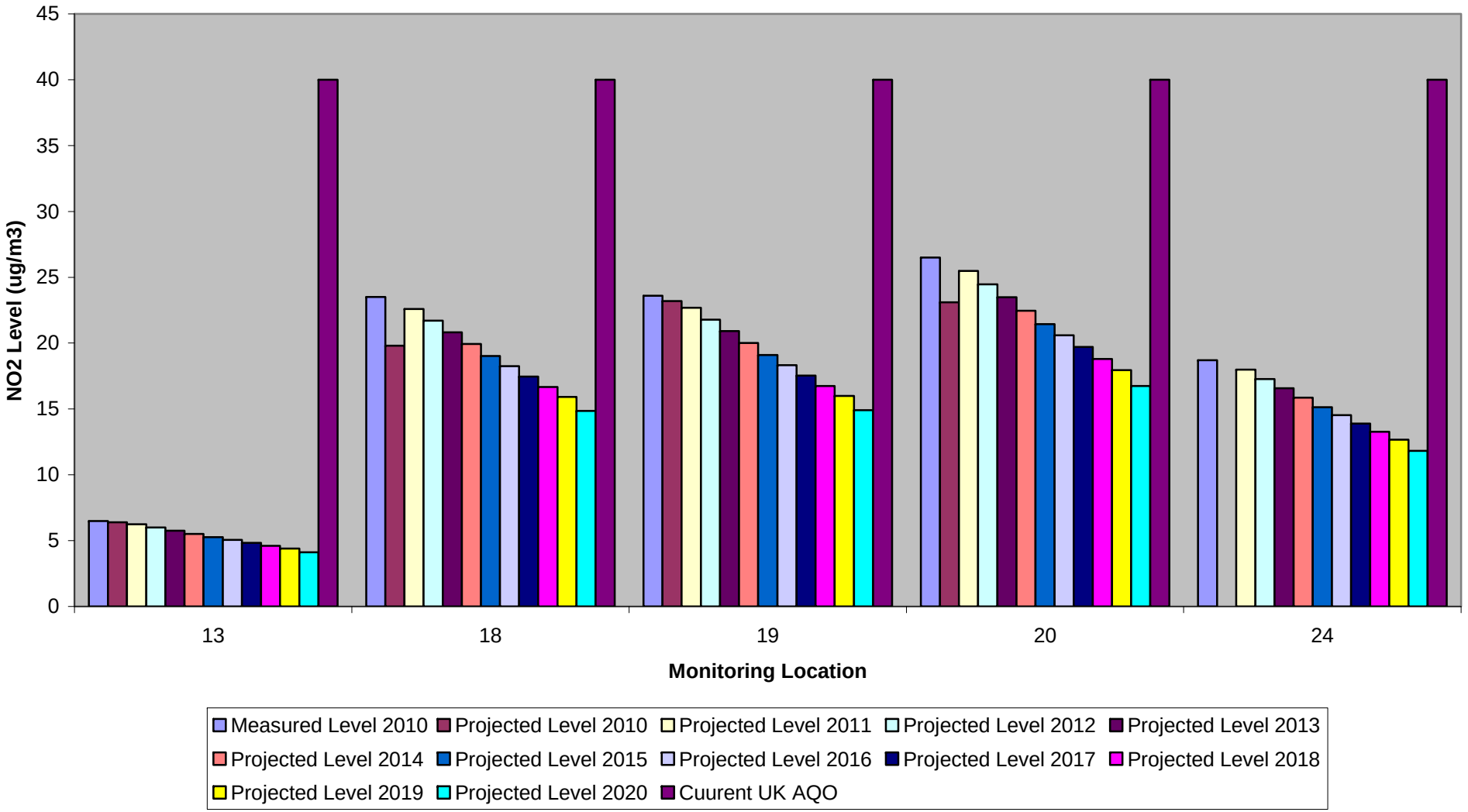
Based on the 2010 levels of Nitrogen Dioxide measured at roadside monitoring locations the projected levels for future years up to and including 2020 are estimated to remain well below the current Air Quality Objective.

It is proposed that the projected results for 2011 will be compared with the measured results that will be obtained from monitoring carried out during 2011 in the next round of Review and Assessment.

Table 2.5 Projected Annual Mean Nitrogen Dioxide Concentrations At Roadside Monitoring Locations

Site Name	Measured Annual Mean 2010 (µg/m^3) Adjusted for bias	Projected Annual Mean 2010 (µg/m^3)	Projected Annual Mean 2011 (µg/m^3)	Projected Annual Mean 2012 (µg/m^3)	Projected Annual Mean 2013 (µg/m^3)	Projected Annual Mean 2014 (µg/m^3)	Projected Annual Mean 2015 (µg/m^3)	Projected Annual Mean 2016 (µg/m^3)	Projected Annual Mean 2017 (µg/m^3)	Projected Annual Mean 2018 (µg/m^3)	Projected Annual Mean 2019 (µg/m^3)	Projected Annual Mean 2020 (µg/m^3)
BGBC-13	6.5	6.4	6.3	6.0	5.8	5.5	5.3	5.1	4.8	4.6	4.4	4.1
BGBC-18	23.5	19.8	22.6	21.7	20.8	19.9	19.0	18.3	17.5	16.7	15.9	14.8
BGBC-19	23.6	23.2	22.7	21.8	20.9	20.0	19.1	18.3	17.5	16.7	16.0	14.9
BGBC-20	26.5	23.1	25.5	24.5	23.5	22.5	21.5	20.6	19.7	18.8	17.9	16.7
BGBC-24	18.7	Not Available	18.0	17.3	16.6	15.9	15.1	14.5	13.9	13.3	12.7	11.8

Figure 4: Projected Nitrogen Dioxide levels at Roadside monitoring locations



2.2.2 PM_{10}

Automatic Monitoring Data

No new automatic monitoring was undertaken for PM_{10} during 2010.

The results obtained from the Automatic Monitoring Station which was located at Garnlydan Primary School obtained during 2009 and which were reported in the 2010 Progress Report remains the most recent information available.

In summary the results that were reported from the above monitoring exercise undertaken during 2009 indicated that the annual mean of 16.3µg/m^3 for PM_{10} was well below the annual mean National Air Quality Objective of 40µg/m^3.

2.2.3 Benzene

Blaenau Gwent CBC does not currently undertake any monitoring for Benzene.

2.2.4 1,3 Butadiene

Blaenau Gwent CBC does not currently undertake any monitoring for 1,3 Butadiene.

2.2.5 Sulphur Dioxide

Blaenau Gwent CBC does not currently undertake any monitoring for Sulphur Dioxide.

2.2.6 Carbon Monoxide

Blaenau Gwent CBC does not currently undertake any monitoring for Carbon Monoxide.

2.2.7 Lead

Automatic Monitoring Data

No new automatic monitoring was undertaken for Lead during 2010.

The results obtained from the Automatic Monitoring Station which was located at Garnlydan Primary School obtained during 2009 and which were reported in the 2010 Progress Report remains the most recent information available.

In summary the results that were reported from the above monitoring exercise undertaken during 2009 indicated that the annual mean of 0.038µg/m^3 for Lead was well below the annual mean National Air Quality Objective of 0.25µg/m^3.

2.2.8 Other Pollutants Monitored

$PM_{2.5}$ - Automatic Monitoring Data

No new automatic monitoring was undertaken for $PM_{2.5}$ during 2010.

The results obtained from the Automatic Monitoring Station which was located at Garnlydan Primary School obtained during 2009 and which were reported in the 2010 Progress Report remains the most recent information available.

In summary the results that were reported from the above monitoring exercise undertaken during 2009 indicated that the annual mean of 5.3µg/m^3 for $PM_{2.5}$ was well below the annual mean National Air Quality Objective of 25µg/m^3.

2.3 Summary Of Compliance With Air Quality Objectives

Blaenau Gwent CBC has examined the results from monitoring in the Borough.

Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3.0 New Local Developments

3.1 Road Traffic Sources

3.1.1 Narrow Congested Streets With Residential Properties Close To The Kerb

Blaenau Gwent CBC confirms that there are no new/newly identified congested streets, with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately assessed in previous rounds of Review and Assessment.

3.1.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Blaenau Gwent CBC confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.1.3 Roads with a High Flow of Buses and/or HGVs

Based on current local knowledge Blaenau CBC confirms that there are no new/newly identified roads with high flows of buses/HGV's, that have not been adequately assessed in previous rounds of Review and Assessment.

3.1.4 Junctions

Blaenau Gwent CBC confirms that there are no new/newly identified busy junctions that have not been adequately assessed in previous rounds of Review and Assessment.

3.1.5 New Roads Constructed Or Proposed Since The Last Round Of Review And Assessment

Former Steel Works Site, Ebbw Vale

Details of a proposed development at the former Steelworks Site in Ebbw Vale, which included proposals for a number of new roads, were presented in the 2008 Progress Report. (Please refer to Pages 41-43 and Appendix 4 of Blaenau Gwent CBC Local Air Quality Review and Assessment - Progress Report 2008).

It was concluded from the detail of the Environmental Statement provided to Blaenau Gwent in support of the proposed development that the proposed scheme would be unlikely to have any significant impact on air quality and thus be unlikely to result in an exceedance of any of the UK National Air Quality Objectives.

At the time of this Report the final stages of remediation of the 200 acre former Steelworks Site are continuing and work is ongoing to ensure that the infrastructure needed for the development to proceed, including the road network and main services, are in place.

In order to monitor the impact of the ongoing works two new monitoring sites for Nitrogen Dioxide using diffusion tubes were selected and monitoring commenced in January of 2010 (BGBC-25 & 26). The results of the monitoring undertaken at the two new sites have been reported in full in Section 2 of this report. Monitoring has confirmed that the measured levels for

Nitrogen Dioxide at the two new monitoring locations adjacent to the development are well within the relevant National Air Quality Objective.

Blaenau Gwent CBC will continue to assess the development as it progresses to identify any areas where further monitoring may be appropriate.

A465 (Heads Of The Valleys Road) – Dualling Scheme

The Heads of the Vallleys Road (A465) is a trunk road which connects Neath to Abergavenny and which links the Midlands and Northern England to West Wales and Ireland.

As part of the National Transport plan the Welsh Assembly Government (WAG) have commenced a six phased scheme of works to improve and upgrade the road network, including the widening of approximately 40km of the A465 between Abergavenny and Hirwaun. It is anticipated that the works, which are spilt into six strategic phases, will result in a decrease in congestion and improvements in terms of road safety. (WAG website, 2011).

The phase of the scheme of road works which is mainly applicable to the Borough of Blaenau Gwent, (A465 Brynmawr to Tredegar), is scheduled to commence during 2012. The design and build contract are currently being developed.

As part of the design and development process Blaenau Gwent CBC have been engaged in consultation in relation to proposed locations for monitoring prior to, during and following the dualling process.

Background monitoring for Nitrogen Dioxide at locations of relevant exposure were approved by Blaenau Gwent CBC in the later months of 2010. The Authority was advised that monitoring would commence shortly following approval. Confirmation of the commencement of the monitoring and provision of the results from the monitoring exercise are awaited from the developer.

The Authority will continue to liaise with all relevant parties regarding monitoring requirements and will continue with its own programme of monitoring for the period of 2011 at existing locations of relevant exposure adjacent to the development. Work will continue to review and assess existing monitoring sites and potential sites for future monitoring.

It is anticipated that the results of any monitoring that are provided to the Authority will be reported in the next round of review and assessment planned for 2012 together with the results from the Authorities own monitoring programme.

Other New/Proposed Roads

Blaenau Gwent CBC confirms that there are no other new/proposed roads that have not been adequately assessed in previous rounds of Review and Assessment.

3.1.6 Roads with Significantly Changed Traffic Flows

Blaenau Gwent CBC confirms that there are no new/newly identified roads with significantly changed traffic flows.

The Authority has reviewed the most recent report outlining the main findings of the collation of traffic data across Gwent, entitled ‘Travel in Greater Gwent 2009’ which was published in 2010.

The report indicates that the Borough *'has seen relatively stable low growth since 1999 up until 2009'*.

3.1.7 Bus and Coach Stations

Blaenau Gwent CBC confirms that there are no relevant bus stations in the Local Authority area.

The two main bus stations within Blaenau Gwent are located in Tredegar and Brynmawr. The number of bus movements per day at both locations are approximately below 500 and therefore well below the screening criteria of 2,500 movements per day as set out in Technical Guidance LAQM.TG(09)

3.2 Other Transport Sources

3.2.1 Airports

Blaenau Gwent CBC confirms that there are no airports in the Local Authority area.

3.2.2 Railways (Diesel and Steam Trains) - Stationary Trains

Blaenau Gwent CBC confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

3.2.3 Railways (Diesel and Steam Trains) - Moving Trains

Blaenau Gwent CBC confirms that there are no locations within the Local Authority area with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

3.2.4 Ports (Shipping)

Blaenau Gwent CBC confirms that there are no ports for shipping that meet the specified criteria within the Local Authority area.

3.3 Industrial Installations

3.3.1 New Or Proposed Installations For Which An Air Quality Assessment Has Been Carried Out

Within Blaenau Gwent Borough

Blaenau Gwent CBC confirms that there are no new or proposed industrial installations for which planning approval has been granted which required an Air Quality Assessment within its area.

Within Neighbouring Authorities Areas

Blaenau Gwent CBC confirms that, based on current knowledge, there are no new industrial installations for which planning approval has been granted during 2010 within a neighbouring authority which may have a significant impact on Air Quality within the Blaenau Gwent Borough.

An application has been submitted for approval to the Infrastructure Planning Commission (IPC) for the development of a new Energy from Waste Facility within the Borough of Merthyr Tydfil. The development may have the potential to affect Air Quality within the Blaenau Gwent Borough.

To the best of current knowledge this application has **not** been approved to-date and is still being processed as part of the planning approval system. As part of the approval process Blaenau Gwent CBC was asked to provide comments to the IPC in the form of a 'Local Impact Report' in relation to the background information outlining the potential environmental impact of the proposed development submitted by the applicant.

No further information is available to provide in this report at this time. Blaenau Gwent CBC will however continue to monitor the progress with the application and it is proposed that an update will be given in the report that will be produced as part of the 2012 Updating and Screening Assessment.

3.3.2 Existing Installations Where Emissions Have Increased Substantially Or New Relevant Exposure Has Been Introduced

Blaenau Gwent CBC confirms that, based on current knowledge, there are no existing installations within the Borough where emissions have substantially increased since the last round of review and assessment.

Blaenau Gwent CBC confirms that, based on current knowledge, there are no industrial installations with substantially increased emissions or new relevant exposure nearby in a neighbouring authority.

Blaenau Gwent CBC confirms that there are no industrial installations with new relevant exposure within its area.

3.3.3 New Or Significantly Changed Installations With No Previous Air Quality Assessment

Blaenau Gwent CBC confirms that there are no new or significantly changed industrial installations for which planning approval has been granted and for which an Air Quality Assessment would have been required within its area or, to the best of current knowledge, within a nearby neighbouring authority that would have an impact on the Air Quality within the Borough.

It should be noted however that whilst there have been no new industrial installations during 2010 for which an Air Quality Assessment would have been required, there have been a number of new businesses established which have required an environmental permit from either Blaenau Gwent CBC or the Environment Agency. None of the new installations have been assessed as being likely to have a significant impact on the Air Quality within the Borough either individually or as a result of the cumulative impact of emissions.

A list of the current Part A1, A2 and B Processes within the Borough previously regulated under the Pollution Prevention (England and Wales) Regulations 2000 (as amended) and the Environmental Permitting (England and Wales) Regulations 2007 (as amended), and which are now regulated under the Environmental Permitting (England and Wales) Regulations 2010 (as amended) is provided in Appendix 4 to this report. The list has been updated to include new installations that have been granted an environmental permit during 2010. New installations are indicated as such on the list.

The list of permitted installations has also been amended to indicate existing installations which were formerly issued with a Waste Management Licence by the Environment Agency but which, as a result of recent changes in legislation, are now deemed to be Environmental Permits rather than a Waste Management Licence, though in essence they are similar. These are **not** new installations. The details have been added to the list in Appendix 4 to ensure comprehensiveness of information only.

There have been no significant changes to any of the existing Part A1, A2 and B processes since the 2010 Progress Report that would be likely to have a significant impact on air quality.

3.3.4 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) depots within the Local Authority Area.

3.3.5 Petrol Stations

Blaenau Gwent CBC confirms that there are no petrol stations meeting the specified criteria within the Local Authority area.

3.3.6 Poultry Farms

Blaenau Gwent CBC confirms that there are no poultry farms meeting the specified criteria within the Local Authority area.

3.4 Commercial And Domestic Sources

3.4.1 Biomass Combustion – Individual Installations

An application was received during 2010 for approval by the Local Authority of the height of a chimney servicing a boiler under Section 15 of the Clean Air Act 1993 to be located at Ysbyty Aneurin Bevan, Ebbw Vale. In summary the details of the application outlined proposals for:

- 1 x dedicated Chimney/Flue serving 1 x 700kW Wood Fuel Biomass Boiler (fuel only to include wood pellets produced from a virgin or clean wood source)
- 1 x Chimney/Flue with header serving 2 x 700kW Gas Fired (each with a dual fuel oil/gas burner

A copy of the information supplied with the application is provided within Appendix 6 to this report.

The impact of the proposed development upon Air Quality was assessed by the receiving officer as negligible and unlikely to result in an exceedance of any of the relevant Air Quality Objectives.

3.4.2 Biomass Combustion – Combined Impacts

The Local Authority are not aware of any commercial biomass installations within the Borough other than that identified in Section 3.4.1.

As reported in the Updating and Screening Assessment 2009 local knowledge indicates that there are few remaining domestic solid-fuel burning properties within the Borough.

Two areas were identified as having the highest density of solid-fuel burning appliances within domestic properties, these are located at Bedwellty Pits and Pochin Houses both located in Tredegar.

Appendix 6 of the Updating and Screening Assessment 2009 provided a breakdown of the assessment of the combined impact of small biomass combustion plant.

Blaenau Gwent CBC assessed that the combined impact of small biomass combustion plant in the 2009 report, and concluded that it was not be necessary to proceed to a Detailed Assessment. The Local Authority is not aware of any significant changes that have taken place during the calendar year of 2010 which would have altered this position.

3.4.3 Domestic Solid-Fuel Burning

Blaenau Gwent CBC confirms that there are no areas of significant domestic fuel use in the Local Authority area.

3.4.4 Small Boilers

Blaenau Gwent CBC is not aware of any boiler plant (>5$MW_{thermal}$) that burns coal or fuel oil located within the Local Authority Area.

3.4.5 New Or Proposed Installations For Which An Air Quality Assessment Has Been Carried Out

Blaenau Gwent CBC confirms that there are no new or proposed Biomass Combustion Installations for which an Air Quality Assessment has been carried out within the Local Authority area since the last round of Review and Assessment.

3.5 New Developments With Fugitive Or Uncontrolled Sources

Blaenau Gwent CBC confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area which have not been adequately assessed in previous rounds of Review and Assessment or which are likely to have a significant impact upon Air Quality within the Borough.

4.0 Local / Regional Air Quality Strategy

4.1 Local Air Quality Management Strategy

Blaenau Gwent CBC produced a Departmental Air Pollution Control Policy and Procedure document in 2007 to facilitate the management of Air Quality with the Borough. A copy of the Air Pollution Control Policy and Procedure Document is provided in Appendix 5 to this report.

It has been identified that in light of current changes to national guidance regarding Air Quality Management the Policy and Procedure document requires some revision and it is hoped that this work will be undertaken within 2011 in conjunction with other Departments within Blaenau Gwent CBC to produce a more strategic and overarching strategy for the management of Air Quality within the Borough.

4.2 Regional Air Quality Management Strategy

Blaenau Gwent CBC actively participates in the work of the Welsh Air Quality Forum which assists in co-ordinating the management of Air Quality at an all Wales level amongst the 22 Local Authorities and other partners.

Further information regarding the work of the Welsh Air Quality Forum is available at http://www.welshairquality.co.uk/

5.0 Planning Applications And Policies

5.1 Planning Consultation Policy

Each week a list of new planning applications that are received by the Planning Division is provided to the Pollution Control Team within the Environmental Health Department. The Pollution Control Team then examines the applications that have been received and requests further details in relation to any applications that may have the potential to impact of local air quality.

Consultation with the Planning Applicant and the Planning Division will take place for any developments that are identified as having the potential to have a significant impact on air quality. The applicant may then be required to submit an Environmental Impact Assessment or an air quality assessment as necessary prior to any planning permission being granted.

5.2 New Planning Applications

Each planning application is judged on its merits and due regard is given to the Planning Policy Wales document regarding Air Quality published by the Welsh Assembly Government, and other relevant guidance.

A copy of Blaenau Gwent CBC Unitary Development Plan (UDP) and further information regarding the planning process within Blaenau Gwent and the Local Authorities policies regarding land use and development control is available at
http://www.blaenau-gwent.gov.uk/business/7725.asp

A link to the Local Development Plan (LDP) is also available at the above website.

The Planning Division classify applications that are received into minor and major developments in accordance with the Welsh Office Planning Statistics guidance. Major developments are classified as being the following:

- major dwelling is 10 or more dwellings or if an outline application 0.5 hectares
- For other types of applications major equates to 1000m^2 floor area or 1 hectare if the application is in outline

Table 3.1 below provides a breakdown of the major applications that were received and approved during 2010 and comments in relation to potential impact on air quality with Blaenau Gwent.

Table 3.1: Applications For Major Developments Received And Approved During 2010

Planning Reference	Type of development	Location	Potential Impact on Local Air Quality
C/2007/0237	Residential development – Outline	Land Off Mountain Road Ebbw Vale	Negligible
C/2008/0383	Residential development	Vacant Land Next to Council Flats, Hill Crest View Abertillery	Negligible
C/2009/0328	Residential development – Outline	Land Adjacent to Park Hill Road Tredegar	Negligible
C/2008/0459	Residential development	Former St Josephs School Glandovey Terrace, Tredegar	Negligible
C/2009/0354	Residential development – Reserved matters approved	Land Off Mountain Road Ebbw Vale	Negligible
C/2010/0001	Residential development	Former Bus Depot Site Woodfield Road, Tredegar	Negligible
C/2009/0266	Residential development	Land adjacent to Gwaun Helyg Road, Ebbw Vale	Negligible
C/2009/0265	Residential development	Former Swffryd Junior School Swffryd Road, Crumlin	Negligible
C/2009/0329	Residential development – Full	Land adjacent to Park Hill Road Tredegar	Negligible
C/2009/0274	Residential development	Part Of Old 45 Site Off Steelworks Road, Ebbw Vale	Negligible
C/2007/0402	Extension to existing unit	Rassau Industrial Estate Ebbw Vale	Negligible
C/2010/0160	Proposed salt storage barn	Civic Amenity Site, Waun Y Pound Industrial Estate, Ebbw Vale	Negligible

No applications for any mineral developments or landfill developments were received by BGCBC during the period of 2010.

6.0 Local Transport Plans And Stratgies

6.1 Regional Transport Plan

Local Authorities are no longer required to develop and produce Local Transport Plans, they are now required to work with neighbouring Authorities to produce Regional Transport Plans in order to promote efficient and effective services.

The first Regional Transport Plan which includes Blaenau Gwent has been developed and published and can be viewed at the following website:

http://www.sewta.gov.uk/strategy.htm

The final version of the document was submitted to the Welsh Assembly on the 30th September 2009. This document is a five year plan considering both local and regional transport networks.

Part of the process of the development of the Regional Transport Plan requires the production of a Strategic Environmental Assessment (SEA) which will give consideration to air quality issues.

The Strategic Environmental Assessment Baseline Study Report and Scoping Report are also available at the above website.

7.0 Climate Change Strategies

7.1 Corporate Energy Policy

As past of its commitment to corporate contribution towards the reduction of greenhouse gases emissions from all its activities and as part of the Climate Change programme Blaenau Gwent CBC has developed an Energy Policy to ensure the effective and efficient use and management of energy.

The Energy Policy compliments the seven core values of the Councils Community plan and contributes to the overall strategic aims of the Local Authority.

At present the Energy Policy is not available on the Blaenau Gwent CBC website and the document currently subject to ongoing review.

A copy of the current document will be made available to the Welsh Assembly Government on request and it is envisaged that upon the finalisation of the review of the current policy and its subsequent publication this document will be made available on the Blaenau Gwent CBC website.

8.0 Conclusions And Proposed Actions

8.1 Conclusions From New Monitoring Data

Blaenau Gwent CBC has examined the results from monitoring in the Borough of Blaenau Gwent for the period of 2010. Concentrations are all below the relevant UK National Air Quality Objectives.

8.2 Conclusions Relating To New Local Developments

Blaenau Gwent CBC has assessed all new or significantly changed sources in the Borough and relevant new or significantly changes sources in nearby Local Authority areas and has concluded that it is unlikely that the impact of these will result in a potential exceedance of any of the UK National Air Quality Objectives within the Borough.

The Authority will continue to monitor the proposed ongoing developments that have been identified in Section 3 of this report to determine the potential impact upon Air Quality within the Borough. The information obtained as part of the ongoing review and assessment will be reported within the 2012 Updating and Screening Assessment.

8.3 Other Conclusions And Proposed Actions

The 2010 Progress Report has not identified the need to proceed to a Detailed Assessment for any pollutant relevant to the UK National Air Quality Objectives.

Blaenau Gwent CBC will continue to monitor for Nitrogen Dioxide subject to the findings of the continuous review and assessment of the existing monitoring sites. Monitoring for the calendar year of 2011 will be carried out at all monitoring locations identified in Table 2.1 of this Report.

It is proposed that the results of monitoring carried out during the calendar year of 2011 will be presented in the 2012 Report which will be prepared as part of the Updating and Screening Assessment process.

References

Air Quality Review and Assessment Helpdesk Website, aqm-review@uwe.ac.uk

Blaenau Gwent CBC, (1999), 1999 First Stage Review and Assessment, http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2003), 2003 Updating and Screening Assessment, http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2004), 2004 Progress Report , http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2005), 2005 Progress Report , http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2006), 2006 Updating and Screening Assessment, http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2007), 2007 Progress Report , http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2008), 2008 Progress Report , http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2009), 2006 Updating and Screening Assessment, http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC, (2010), 2008 Progress Report , http://www.blaenau-gwent.gov.uk/environment/2774.asp

Blaenau Gwent CBC (2010), Unitary Development and Local Development Plans, http://www.blaenau-gwent.gov.uk/business/7725.asp

Blaenau Gwent CBC, (2004), Corporate Energy Policy.

Capita Symonds, (2009), Travel In Greater Gwent 2009 – Summary Report, Capita Symonds, Cwmbran.

DEFRA, (2009), Local Air Quality Management - Technical Guidance LAQM.TG(09), DEFRA.

Environmental Compliance Ltd, (2009), Ambient Air Quality Survey at Garnlydan School – Prepared for Envirowales Ltd, Rassau Industrial Estate, Environmental Compliance Ltd, Pontypridd.

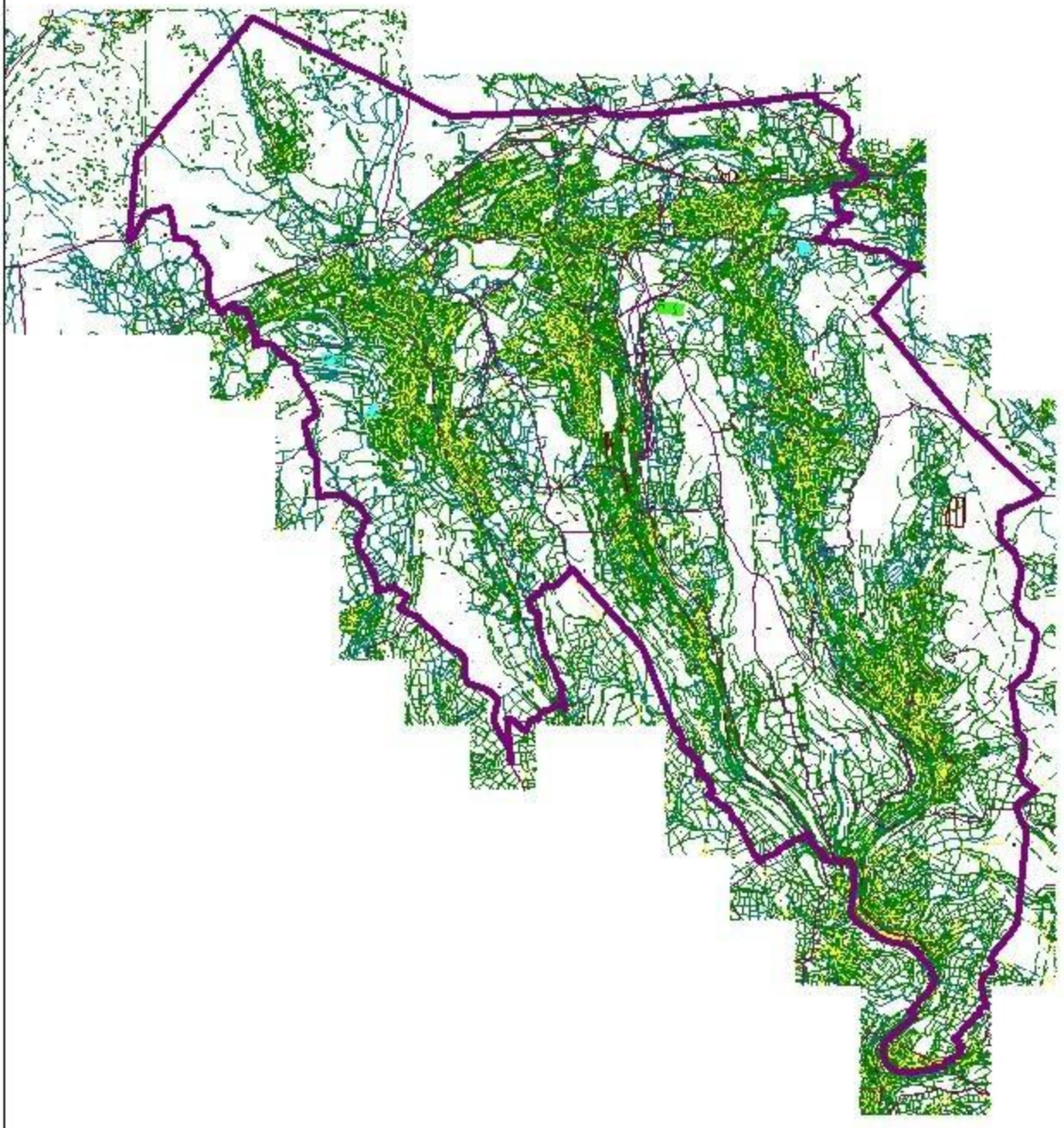
SEWTA, (2009), Regional Transport Plan and Strategic Environmental Assessment http://www.sewta.gov.uk/strategy.htm

UK Air Quality Archive, http://www.airquality.co.uk/data_and_statistics.php.

Welsh Air Quality Forum Website, http://www.welshairquality.co.uk/

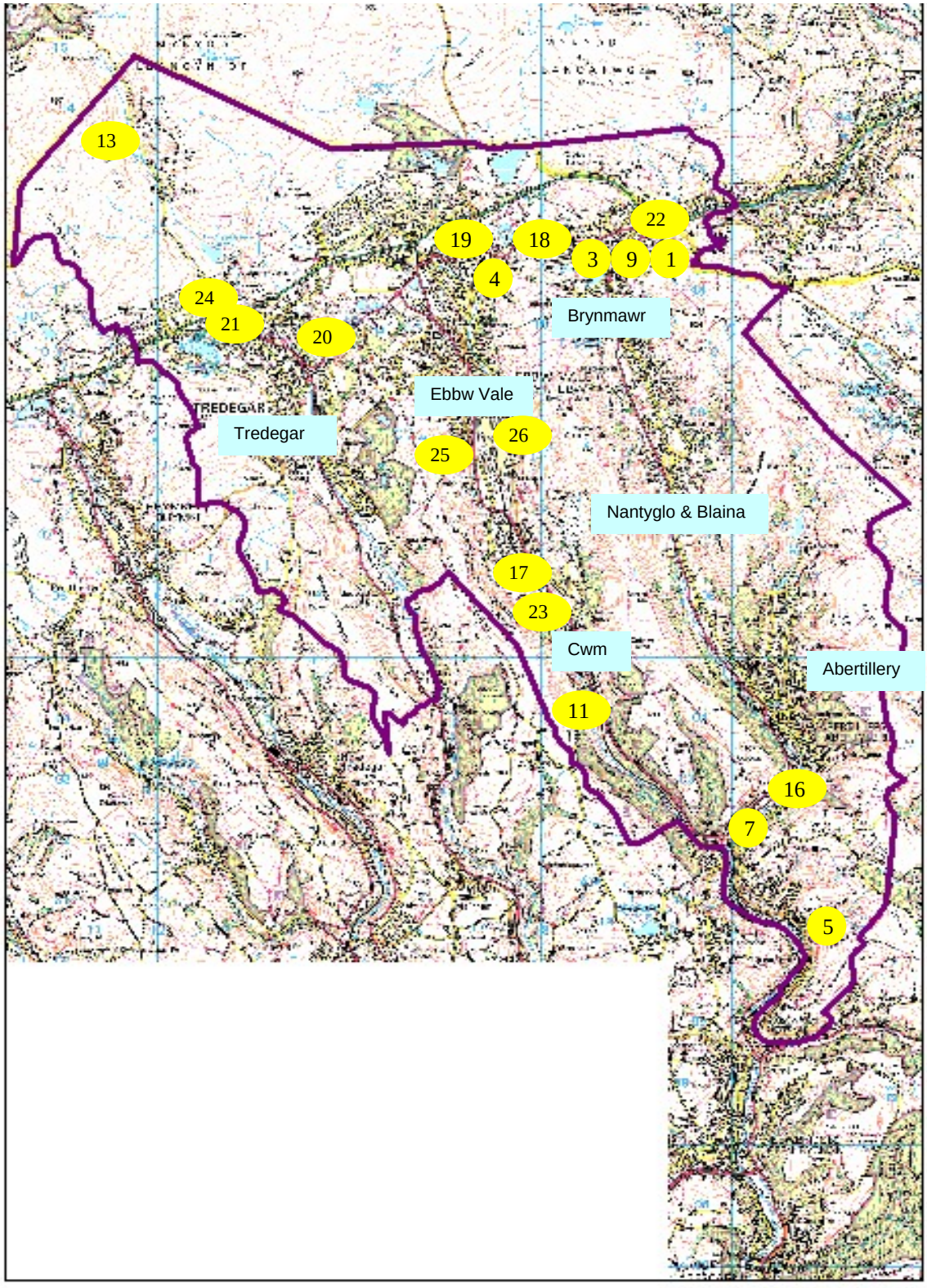
Appendix 1

Administrative Area of Blaenau Gwent



Appendix 2

Location of NO_2 Monitoring Sites within Blaenau Gwent 2010



Appendix 3

NO_2 Diffusion Tube Monitoring Monthly Mean Values 2010

* DAMAGED TUBE ** TUBE MISSING *** LAB LOST TUBE

SITE	07/01-04/02	04/02-04/03	04/03-01/04	01/04-01/05	01/05-03/06	03/06-01/07	01/07-29/07	29/07-02/09	02/09-30/09	30/09-04/11	04/11-02/12	02/12-08/01	Annual Mean	Bias Factor	Adjusted Annual Mean
BGBC-007	30	23	21	15	12	17	13	15	17	21	27	33	20.3	0.85	19.5
BGBC-005	20	21	19	17	14	14	12	13	13	17	22	31	17.8	0.85	17.0
BGBC-011	23	19	16	13	11	10	2	12	11	17	20	29	15.3	0.85	14.5
BGBC-013	9	9	10	5	5	5	5	5	5	10	8	12	7.3	0.85	6.5
BGBC-016	29	28	24	21	20	14	19	19	22	26	32	38	24.3	0.85	23.5
BGBC-017	30	27	26	18	15	15	11	15	15	23	27	38	21.7	0.85	20.9
BGBC-018	35	28	32	22	*	18	16	16	17	19	27	37	24.3	0.85	23.5
BGBC-019	29	24	33	22	23	23	20	22	22	25	24	26	24.4	0.85	23.6
BGBC-020	30	26	32	26	26	28	21	25	22	31	28	33	27.3	0.85	26.5
BGBC-021	20	18	19	21	2	35	13	18	18	22	20	28	19.5	0.85	18.7
BGBC-022	29	22	26	19	20	21	12	18	16	18	25	29	21.3	0.85	20.5
BGBC-023	25	23	23	18	15	**	11	14	16	19	24	33	20.1	0.85	19.3
BGBC-024	21	21	22	13	15	12	18	16	21	22	26	27	19.5	0.85	18.7
BGBC-025	18	22	19	16	16	16	11	14	12	19	21	26	17.5	0.85	16.7
BGBC-026	21	21	22	12	12	11	13	15	13	19	21	33	17.8	0.85	17.0
BGBC-001	***	29	24	25	20	19	12	14	20	24	31	31	22.6	0.85	21.8
BGBC-009	31	30	26	25	21	23	13	13	19	25	30	29	23.8	0.85	23.0
BGBC-003	27	26	19	17	10	11	8	9	14	21	22	25	17.5	0.85	16.7
BGBC-004	22	18	13	10	8	7	8	8	10	16	16	11	12.3	0.85	11.5

Appendix 4

List of Part A1, A2 and B installations.

Part A1 Installations:

Company Name	Address of Installation	Activity Permitted
Silent Valley Landfill Site	Silent Valley Waste Services, Beechwood House, Cwm, Ebbw Vale, NP23 6PZ	Landfill Site
Continental Tea Leaves (UK) Limited	Waun Y Pound Industrial Est., Ebbw Vale, NP23 6PL	Surface Treatment of Metals
Yuasa Battery UK Ltd	Unit 22 Rassau Industrial Estate, Ebbw Vale, NP23 5SD	Melting of Non-Ferrous Metals
Envirowales Ltd	Rassau Industrial Estate, Ebbw Vale, NP23 5SD	Melting of Non-Ferrous Metals
High Chemicals	Tarfarnaubach Industrial Estate, Tredegar. NP22 3AA	Production of Ferric Chloride
Sundance Renewables (Sustainable Energy Co-operative) Ltd (formerly BioTech Oils UK Ltd)	Tarfarnaubach Industrial Estate, Tredegar, NP22 3AA	Production of bio-diesel
Atraverda Ltd ***(New for 2010)***	Units A, B, C Roseheyworth Business Park North, Abertillery, NP13 1SX.	Manufacture of bipolar lead acid batteries - low impact installation (standard rules permit)
Envirowales Ltd ***(New for 2010)***	Unit 5, Tarfarnaubach Industrial Estate, Tredegar, NP22 3AA.	Storage and treatment (crushing and bagging) of hazardous waste within a contained facility
Gryphonn Quarries Ltd ***(Varied during 2010)***	Tredegar Quarry Complex, Trefil, Tredegar, NP12 4HG.	Management of inert extractive wastes at mines and quarries (standard rules permit)
Remax Recycling Ltd	Unit 20, Tarfarnaubach Industrial Estate, Tredegar, NP22 3AA	Hazardous waste transfer station with treatment
A Lewis Waste Paper Collections & Skip Hire	Plot L, Blaenant Industrial Esatate, Brynmawr, NP23 4EB.	Household, commercial and industrial waste transfer station with treatment
Tredegar Car Dismantlers	Duke Street Yard, Duke Street, Tredegar, NP22 3DW	Vehicle de-pollution and dismantling facility
David Parfitt	Porters Yard, Limestone Road, Nantyglo, NP23 4ND	Vehicle de-pollution and dismantling facility

Part A1 Installations (continued):

Company Name	Address of Installation	Activity Permitted
T & H Commercials Ltd	Unit 3E, Blaenant Industrial Estate, NP23 4BX	Vehicle de-pollution and dismantling facility
A Lewis Waste Paper Collections & Skip Hire	Milfraen View, Blaenant Industrial Esatate, Brynmawr, NP23 4PQ.	Transfer station and vehicle de-pollution and dismantling facility
Thomas Waste Management Ltd	Old Hafod Garage, Old Abergavenny Road, Brymawr, NP23 4BU	Waste transfer station
Blaenau Gwent CBC	Central Depot, Barleyfield Industrial Estate, Brynmawr, NP23 5JB	Municipal street cleaning and gully waste dewatering facility

Part A2 Installations:

Company Name	Address of Installation	Activity Permitted
GTS Flexible Materials Ltd	Unit 41, Rassau Industrial Estate, Ebbw Vale, Blaenau Gwent. NP23 5SD	Film Coating
Tata Steel UK (formerly Corus Colours Consumer Products)	Tarfarnaubach, Tarfarnaubach Industrial Estate, Tredegar. NP22 3AA.	Coil Coating

Part B Installations:

Company Name	Address of Installation	Activity Permitted
Tarmac Topmix Limited	Trefil Quarry, Trefil, Tredegar, NP22 4HF	Cement Batching
Hanson Premix Limited	Waun-y-Poud Industrial Estate, Ebbw Vale, NP23 6PL	Cement Batching
Thomas Waste Management	Hafod Garage Transfer Station, Old Abergavenny Road, Brynmawr, NP23 4BU	Mobile Crushing and Screening
A B Cardinal Packaging Ltd (formerly Studiosmart Ltd)	Unit 29 Rassau Industrial Estate, Ebbw Vale, NP23 5SD	Printing of Flexible Packaging
Blackwood Engineering Works Limited	Glandwr Industrial Estate, Aberbeeg, Abertillery, NP13 2LN	Coating of Metal Counterweights
Yamada Europe Limited	Festival Drive, Ebbw Vale, NP23 6XS	Casting of Aluminium
Cotech Senitising Ltd	Units 13-16 Tarfarnaubach Industrial Estate, Tredegar. NP22 3AA.	Film Coating
Gryphonn Quarries Ltd	Trefil Quarry, Trefil, Tredegar. NP12 4HG.	Mobile Crushing and Screening

Part B Installations (continued):

Monterey Tiles Ltd (formerly Carpet Tile Factory Ltd)	Units 8 & 9, Rising Sun Industrial Estate, Blaina, NP13 3JW	Tar and Bitumen process
Lafarge Roofing Limited	Unit 15, Rassau Industrial Estate, Ebbw Vale, NP23 5SD	Fibre and Reinforced Plastics
Sogefi Filtration Ltd	Crown Business park, Tredegar, Blaenau Gwent, NP22 4EF.	Di-isocynate Process
Chapel Road Garage	Blaina Road, Nantyglo, NP23 4PT	Unloading of Petrol at Filling Station
Central Garage,	Abertillery Road, Blaina, NP13 3DN	Unloading of Petrol at Filling Station
Festival Service Station	By-pass Road, Ebbw Vale, NP23 8UW	Unloading of Petrol at Filling Station
Nantybwch Service Station	Nantybwch, Tredegar, NP22 3SB	Unloading of Petrol at Filling Station
Hilltop Garage	King Street, Brynmawr. NP23 4JD.	Unloading of Petrol at Filling Station
Tesco Service Station	Castle Street, Abertillery, NP13 1UR	Unloading of Petrol at Filling Station
Tesco Service Station	North Western Approach, Ebbw Vale, NP23 6TS	Unloading of Petrol at Filling Station
Roundabout Services, Sirhowy Bridge	Dukestown Road, Tredegar, NP22 4XL	Unloading of Petrol at Filling Station
Morrisons Service Station	Bryn Serth Road, Beaufort, Ebbw Vale, NP23 5YD	Unloading of Petrol at Filling Station
A Lewis Waste Paper Collections & Skip Hire ***(New for 2010)***	Milfraen View, Blaenant Industrial Estate, Brynmawr	Mobile Crushing and Screening

Appendix 5

Blaenau Gwent CBC Air Pollution Control Policy And Procedure

Cyngor Bwrdeisdref Sirol
Blaenau Gwent
County Borough Council

Pollution and General Services Team
Policy and Procedures Document

Air Pollution Control

Environment Directorate
Public Protection Division
Environmental Health Section

To carry out the statutory function of enforcing The Environmental Protection Act 1990, the Clean Air Act 1993 and the Environment Act 1995 to control the quality of the air in Blaenau Gwent and safeguard residents and visitors health.

Purpose

These procedures set out how the Authority will investigate complaints about Air Pollution in the County Borough and how Local Air Quality will be assessed and managed.

Scope

This procedure applies to all officers within the Pollution and General Services Team who will investigate complaints about air pollution and take appropriate action to resolve them and those with responsibility for Local Air Quality Management.

Legislation and Guidance

- Environmental Protection Act 1990
- Clean Air Act 1993
- British Standard BS2742:1969.
- Environment Act 1995
- Air Quality (Amendment) Regulations 2002
- DEFRA Air Quality Guidance Documents

PROCEDURES

The procedures are split into two parts. Each deals with the enforcement of specific pieces of legislation, which control air pollution levels within the County Borough of Blaenau Gwent. Some of the procedures, especially in relation to the burning of waste on bonfires, will apply to commercial, trade and industrial premises as well as a domestic premises.

PART ONE
Statutory Nuisance

It must be noted that all other types of nuisance e.g. penetrating dampness, are dealt with under the Policy and Procedure document on General District Work. Noise Nuisance is documented in the Noise Control Policy and Procedure Document.

1.1 Control of Bonfires

1.1.1 Once a complaint regarding a bonfire is received by the administration section it will be immediately entered onto the FLARE system. The complaint will then be passed to the Environmental Health Officer within four hours of it being received, contacting the officer on his/her mobile phone, where applicable.

1.1.2 If the complaint is about a large or very smoky bonfire that is burning at the time of the complaint the officer will visit the site of the fire as soon as possible, and certainly on the same day that the complaint is received. If the officer is satisfied that the smoke from the bonfire constitutes a statutory nuisance then a legal notice will be served on the owner/occupier/person responsible, as appropriate within three working days.

1.1.3 If the complaint is about bonfires at a certain premises that are a recurrent problem the officer will dispatch a set of monitoring forms o the complainant. The forms will be dispatched within three working days of the complaint being received.

1.1.4 If a set of completed monitoring forms are returned the EHO will arrange to visit the site at an appropriate time. This time will be established by following any patterns that are identified from the monitoring forms and from discussions with the complainant. Again, if when the site is visited, be it on the first or an any number of subsequent visits, and a statutory nuisance is established then a legal notice will be served on the owner/occupier/person responsible, as appropriate.

1.1.5 Once a notice has been served the officer will return to the site once it has expired to verify compliance with the notice.

1.1.6 If a complaint is received that a bonfire is in progress, possibly in contravention of a notice, the EHO will visit as soon as possible and certainly on the same working day to establish whether or not the conditions of the notice have been breached.

1.2 Odour from commercial premises.

1.2.1 Once a complaint regarding a smell from commercial premises is received by the administration section it will be immediately entered onto the FLARE system. The complaint will then be passed to the Environmental Health Officer as soon as practicable and certainly within four hours of it being received, contacting the officer on his/her mobile phone, where applicable.

1.2.2 It will then be for the EHO to decide which course of action is most appropriate. If the complaint is about an on-going smell that appears to be a one-off occurrence the officer will visit the complaint's address as soon as possible and certainly on the same day that the complaint is made. If a statutory nuisance is witnessed then it will be for the EHO to take the appropriate formal action by serving a legal notice on the owner/occupier/person responsible for the nuisance. This notice will be served within three working days.

1.2.3 If the complaint is about an odour from a certain commercial premises that is a recurrent problem the officer will dispatch a set of monitoring forms to the complainant. The forms will be dispatched within three working days of the complaint being received.

1.2.4 If a set of completed monitoring forms are returned the EHO will arrange to visit the site at an appropriate time. This time will be established by following any patterns that are identified from the monitoring forms and from discussions with the complainant. Again, if when the site is visited, be it on the first or an any number of subsequent visits, and a statutory nuisance is established then a legal notice will be served on the owner/occupier/person responsible, as appropriate. This will be served within three working days.

1.2.5 Once a notice has been served the officer will return to the site once it has expired to verify compliance.

1.2.6 If a complaint is received that a bonfire is in progress, possibly in contravention of a notice, the EHO will visit as soon as possible and certainly on the same working day to establish whether or not the conditions of the notice have been breached.

PART TWO

Dark Smoke Control

It must be noted that the controls of the Clean Air Act 1993 provision do not apply to processes permitted under the Pollution Prevention and Control Regulations 2000.

2.1 Dark Smoke from an Industrial or Trade Premises

2.1.1 Once a complaint regarding dark smoke from an industrial or trade premises is received by the administration section it will be immediately entered onto the FLARE system. The complaint will then be passed to the Environmental Health Officer as soon as practicable and certainly within four hours of it being received, contacting the officer on his/her mobile phone, where applicable.

2.1.2 It will usually be the case that the EHO will need to visit the site in question as soon as possible to witness the events. The officer will visit the premises as soon as possible, and certainly on the same day that the complaint is received.

2.1.3 As it is a strict liability offence to produce dark smoke it is important that the officer either has suitable experience in assessing dark smoke or they compare it to a Ringelmann Chart. Dark smoke is smoke that would appear to be as dark, or darker, than shade two on the Ringlemann Chart.

2.1.4 If the officer is satisfied that the smoke is dark as defined in the regulations and is being emitted from an industrial or trade premises he/she shall formally caution the owner of the premises in line with the policy on legal action.

2.1.5 Prosecution will usually follow this type of offence having due regard to the Environmental Health Enforcement Policy.

2.2 Dark Smoke from Chimneys

2.2.1 This procedure applies to the emission of dark smoke from a chimney of any building. It also applies to chimneys not attached to a building serving furnaces of fixed boilers or industrial plant.

2.2.2 Once a complaint regarding dark smoke from a chimney is received by the administration section it will be immediately entered onto the FLARE system. The complaint will then be passed to the Environmental Health Officer as soon as practicable and certainly within four hours of it being received, contacting the officer on his/her mobile phone, where applicable.

2.2.3 It will usually be the case that the EHO will need to visit the site in question as soon as possible to witness the events. The officer will visit the premises as soon as possible, and certainly on the same day that the complaint is received.

2.2.4 As it is a strict liability offence to produce dark smoke it is important that the officer either has suitable experience in assessing dark smoke or they compare it to a Ringelmann Chart. Dark smoke is smoke that would appear to be as dark, or darker, than shade two on the Ringlemann Chart.

2.2.5 It is important that the EHO gives due regard to the four defences available for dark/black smoke emission.

2.2.6 If the officer is satisfied that the smoke is dark as defined in the regulations and is being emitted from an industrial or trade premises he/she shall formally caution the owner of the premises in line with the policy on legal action.

2.2.7 Prosecution will usually follow this type of offence having due regard to the Environmental Health Enforcement Policy.

PART THREE

Local Air Quality Management

3.1 The Authority is under a statutory duty to assess and manage local air quality. As part of this process the local Authority carries out NOx diffusion tube monitoring. The Senior Environmental Technician changes these tubes monthly. The tubes are sent to two laboratories for analysis. The Senior Environmental Technical is responsible for this process and keeping a log of the results obtained.

3.2 The Authority are required to carry out regular assessments of Local Air Quality. The Senior EHO is conjunction with the Team Leader and the Head of Environmental Health will prepare these reports.

3.3 All reports will be prepared and submitted to WAG within the prescribed timescales.

3.4 In conjunction with the Environment Agency, the Planning Section and the Highways Division consolations for developments will be considered with the air quality objectives being an important factor in deciding the suitability of such development. Comments on Air Quality will be made in accordance with the policy document on Planning Consultation.

3.5 All relevant departments of the Authority will be consulted when preparing statutory reports.

SUMMARY OF RESPONSE TIMES

1. Upon receipt of complaint it will be entered on to the Flare system immediately.

2. The complaint will be passed to the Environmental Health Officer within four hours of the complaint being received.

3. Monitoring forms (where necessary) will be dispatched within three working days of the complaint being received.

4. An ongoing bonfire will be visited within the same working day.

5. Notice to be served within three working days of a statutory nuisance being witnessed.

Appendix 6

Application For Chimney Height Approval
Received During 2010 -
Ysbyty Aneurin Bevan

Cyngor Bwrdeisdref Sirol
Blaenau Gwent
County Borough Council

a better place to live and work

CLEAN AIR ACT 1993

SECTION 15 – CHIMNEY HEIGHTS

APPLICATION FOR APPROVAL BY THE LOCAL AUTHORITY OF THE HEIGHT OF A CHIMNEY SERVICING A FURNACE/BOILDER

Full name and address of applicant:

Arup,
4 Pierhead Street
Capital Waterside
Cardiff
CF10 4QP

Telephone number:
02920 473727

Address of premises where chimney proposed (if different from above):

Ysbyty Aneurin Bevan
Ebbw Vale

Full name and address of agent/consultant (if applicable):

Not Applicable

Telephone number:

Not Applicable

Please provide a brief description of the proposed work:

1no dedicated Chimney/Flue serving 1no 700kW Wood Fuel Biomass Boiler and 1 no dedicated Chimney/Flue with header serving 2no 700kW Gas Fired Boilers (each with a dual fuel oil / gas burner

BUILDINGS

Height of building to which the proposed chimney will be attached:

8.5 metres to the Eaves and 2.645 metres to the Ridge

Length and breadth of building to which the chimney is attached:

Energy Centre: 34 metres long x 12 metres wide

Height(s)/length(s) and breadth(s) of adjacent building(s):

No applicable

Distance of adjacent buildings from proposed chimney:

Not applicable

PARTICULARS OF CHIMNEY

Height of chimney above ground level:

Please see attached Technical Submittal.

Details of construction of chimney (material, insulation, single/multi flue, internal diameter, cap or cowl):

Please see attached Technical Submittal

EMISSIONS

It is recommended that the applicant follows the guidelines contained within the Third Edition of the 1956 Clean Air Act Chimney Heights Memorandum.
Technical Guidance Note (Dispersion) D1, Guidelines on Discharge Stack Heights for Polluting Emissions (ISBN: 0-11-752794-7) (available from The Stationary Office Ltd – please see appendices for contact details) can also be used to complement the memorandum. Both documents can be used to calculate chimney heights for indirect heating and stream raising boilers running on fossil fuels for which sulphur dioxide or oxides of nitrogen may be significant emissions.

Please show calculations (attach additional documents as necessary).

Quantity and composition of emission from the material being heated e.g. does it contain fume, dust, grit etc or any gases such as sulphur, carbon monoxide/dioxide etc:

INDICATIVE EMISSIONS (FUEL SENSITIVE) based on EN 303-5 Testing has the following full load emissions
PM10 25 – 40 mg/m^3
CO 40 -60 mg/m^3
NO_x 90 mg/MJ

Above Corrected to 10% O_2 in line with EN 303-5.
Any SO_x will be related to the sulphur content of the wood fuel used.

Volume of chimney gases at working temperature m3/second:

Full Load MASS FLOW (assuming typical operating conditions) 1740 kg/hr, equivalent to 0.585859 m^3/s at 155°C.

Working temperature of chimney gases in degrees C (please state at which point this is measured):

Full Load Flue Gas Temperature (Clean Boiler) measured at flue spigot on the chimney = 155°C. This might increase if boiler surfaces left dirty – typical maximum might approach 200°C.

Efflux velocity of chimney gases at working temperature and at maximum loading off plant (m/s):

This depends on selected chimney dimension eg at 350mm ID the above volume flow would be 6.1 m/s efflux – needs to be confirmed with the flue specialist.

Stochiometric combustion volume in m3/S (where applicable):

Depending on pellet quality but assuming 10% moisture content then the design stochiometric air supply is based around 5.1Nm^3/kg of fuel.

Position of nearest fan assisted intake (not including intakes for combustion air or fan dilution air) and openable windows. Please indicate distance of the fan from the outlet and provide a plan where available.

Air intake for combustion purposes is provided from high and low level louvres supplying fresh air directly to the boiler plantroom.

For what purpose is chimney height approval sought (please tick)

- new chimney/furnace: ✓
- Increase in combustion space of an existing furnace: ☐
- Replacement of furnace with one having a larger combustion space: ☐

FURNACE(S)

Intended use of furnace (e.g. boiler, metal melting/reheating, drying etc):

1no Wood Fuel Biomass Boiler and 2 No Natural Gas Boilers providing heating and Domestic Hot Water to Ysbyty Aneurin Bevan

Type and description of furnace (as applicable):

- Particulars of furnace to be installed:

  Biomass Boiler – Hoval STU 800 rated at 700 kW
  The boiler is a Hoval STU 800 Wood Pellet Biomass boiler, manufactured by Hoval Limited, Northgate, Newark, Nottingham NG24 1JN, rated at a thermal capacity of 700kW.
  Based on Hoval's well established ST boiler design the STU boiler is a welded steel boiler complete with a matched underfeed retort(s) pellet stoker, designed to operate with wood pellet fuel to the specification indicated below. The boiler comprises of a welded steel shell with a water jacket surrounding an oval combustion chamber. The stoker is typically arranged to deliver the fuel into the rear of the boiler. It comprises of combustion retort(s) or an underfeed stoker mounted into the base of the boiler. Each retort has a dedicated delivery or conveyor auger, each fitted with motor or drive to meter wood pellet fuel into the boiler at the desired rate – the motors on an STU 800 are inverter-controlled. The delivery auger(s) collect wood pellets from a transfer box or small hopper mounted at the rear of the boiler. The level of the pellet feed within the transfer box is regulated to maintain a break or gap between the bottom and the top of the transfer box. Pellets are automatically transferred from a bulk pellet store via a pick-up auger or augers into the top of the Transfer box and then fed into the boiler as described above. Combustion Air is supplied from one of two fans fitted to the boiler. The Forced Draught (FD) fan is mounted on the floor adjacent to the delivery auger(s) and has a motorised damper arrangement fitted to its inlet – it is also inverter (speed) controlled. An Induced Draft (ID) fan is fitted in the ductwork at the outlet of the boiler and cyclone assembly, which draws secondary combustion air into the furnace of the boiler as well as assisting with the flow of the products of combustion through the boiler and cyclone equipment. The ID fan is also influenced by a motorised damper mounted into the inlet of the ID fan and again, is fitted with an inverter-controlled motor. Air supply is regulated (via a lambda probe mounted in the flue ductwork) to match the fuel feed into the boiler. This ensures optimum boiler efficiency across the firing range of the boiler. Under normal operation wood pellet fuel is continually fed from the transfer box of the stoker into the bottom of the combustion retort(s), the incoming fuel gradually pushing its way up the retort with arrival of fresh fuel. Assuming ignition has been established the wood pellet fuel burns as it passes upward through the retort, combustion air being supplied through a series of holes or tuyeres fitted into the side and around the edges of the retort. Any incombustible material or ash collects - typically toward the rear of the boiler behind the retort - on the generously sized hearth. On start up the retort is subject to a pre fuel feed purge of air to re invigorate the fire. The stoker is held in low fire for a pre set period before modulation permitted – to establish a stable fire and ensure there is sufficient heat within the combustion chamber before fuel feed is increased. Similarly on shut down the stoker will modulate to a low fuel feed gradually and then a post firing purge of air helps to ensure that the fuel is burnt down in an efficient emission free way. Pellet feed is adjusted to match the boiler load with the supply of combustion air modulated to suit.

Gas Fired Boilers. 2 x Cosmo 700 Duel Fuel (Natural Gas/Oil) fired Boilers. Reverse Flame Steel Boiler with unique third pass tube design. Complete with matched Pressure Jet Duel Fuel burner. Units designed and manufactured under EN ISO 9001.

- Particulars of changes to existing furnaces:

  Not applicable

- Particulars of furnace to be removed:

  Not applicable

RATING AND FUEL CONSUMPTION

Gross calorific value MJ/Kg orMJ/m3

Natural Gas: 37 - 43 MJ/m3
(Note that calorific value of gas supply is varied by gas supplier)

Wood Fuel: 1700kj/kg or 4.72kWh/kg

Maximum rate of fuel consumption in kg/hr or m3/hr:

Natural Gas Boilers – at 700 kW (typical Natural Gas CV) fuel consumption per boiler 79.8 m^3/h.

Biomass Boiler – at 700 kW assuming typical wood pellet quality anticipated fuel consumption at full load approx 162 kg/hr.

Type(s) of fuel to be used (and sulphur content %):

Natural Gas: less than 50mg /m3

Wood Biomass: less than 0.05% sulphur content

ANY OTHER RELEVANT INFORMATION

Please provide a plan of the proposed chimney, indicating adjacent buildings, details of the chimney height calculation and any other relevant information.

Please see attached Chimney and Flue Technical Submittal (P002-HAY-TS-M22), Also Hoval Technical Submittal (P002-HAY-TS-M26)

ARUP	Job No. 120940	Sheet No. 1	Rev.
	Member/Location	Arup Cardiff	
Job Title Ysbyty Aneurin Bevan	Drg. Ref.		
	Made by SS	Date 02.08.10	Chd. SS

3rd Memorandum Calculation for Very Low Sulphur Fuels

Heating Plant Ref	Description	Output (kW)	Efficiency (%)	Heat Input (MW)	Uncorrected Height (m)	5U	Building Height (m)	U<2.5 Building Height	Corrected Height (m)	Round Up	Notes
B-SB-01	Gas Boiler	1500	85%	1.765	1.9122	9.5612	8.5	Yes	9.65	10	Output combined under 5U rule.
B-SB-02	Gas Boiler										

Notes

1. Based on Very Low Sulphur Fuel (VLS)
2. Calculation based on system operating with both gas boilers full load

ARUP	Job No. 120940	Sheet No. 2	Rev.
	Member/Location	Arup Cardiff	
Job Title Ysbyty Aneurin Bevan	Drg. Ref.		
	Made by dj SS	Date 02-08-10	Chd. SS

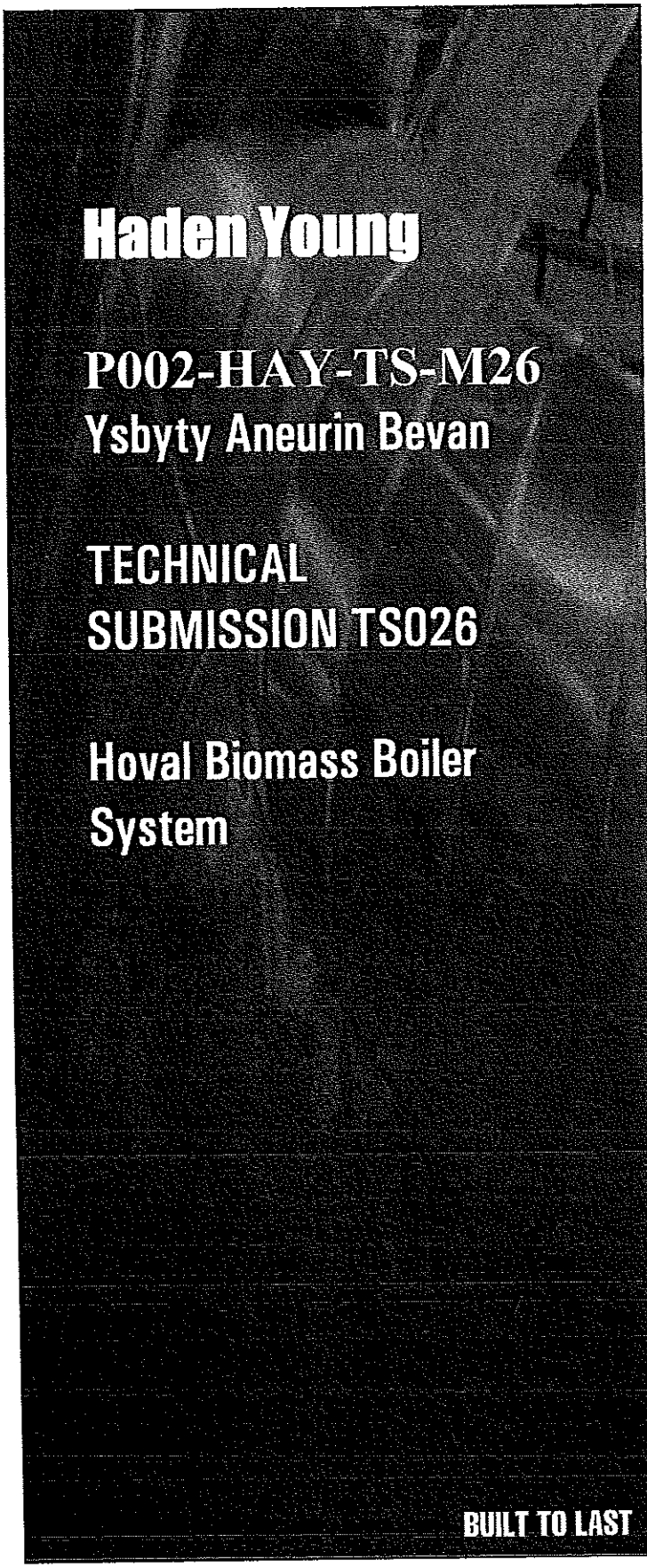
3rd Memorandum Calculation for Biomass Boiler(s)

Heating Plant Ref	Description	Output (kW)	Efficiency (%)	Heat Input (MW)	Calorific Value Of Fuel (MJ/kg)	Burning Rate (kg/hr)	Fuel Sulphur Content (%)	Sulphur Dioxide Emissions (kg/hr)	Type Of District	Adjusted Sulphur Dioxide Emissions (kg/hr)	Uncorrected Chimney Height (m)	5U (m)	Building Height (m)	U<2.5 Building Height	Corrected Chimney Height (m)	Rounded Chimney Height (m)	Notes
BB-01	Biomass Boiler	1500	89%	1.685	10.0	606.7	5.00%	0.303	B	0.237	2.919	14.593	8.5	Yes	10.25	11	Output combined under 5U rule.

Notes

1. Calculation based on 2 no. Biomass boilers operating at the buildings full thermal load. In reality this will not be possible as the worse case senario would be 1 No. biomass boiler and 1 no gas fired boiler.
2. This approach has been taken due to the limitations of the 3rd memorandum calculation methodology purely to prove that the installed flue height is greater than a senario that is even worse than theoretically possible.

Area Type	Factor	
A	2	An undeveloped area where development is unlikely
B	0.78	A partially developed area with scattered houses
C	1	A built up residential area
D	1.3	An urban area of mixed industrial and residential development
E	1.6	A large city or an urban area, of mixed heavy industrial and dense residential development



Haden Young
Major M&E Contractor
Winner 2001 2002 2003

Hoval

Technical Submittal Ysbyty Aneurin Bevan

Biomass Wood Pellet System including;

Hoval STU Boiler rated at 700kW (including Wood Pellet Specification)

Wood Pellet fuel recovery from a purpose built fuel store

Wood Pellet transfer system from pellet store to boiler

Accumulator (Buffer Vessels) Tanks.

May 2009

Hoval

Boiler/Wood Pellet Stoker Details

(STU 800 boiler model rated at 700 kW output).

Based on Hoval's well established ST boiler design the STU boiler is a welded steel boiler complete with a matched twin retort pellet stoker, designed to operate with wood pellet fuel to the specification indicated below.

The boiler comprises of a welded steel shell with a water jacket surrounding an oval combustion chamber.

The stoker is arranged to deliver the fuel into the rear of the boiler. It comprises of twin combustion retorts mounted into the base of the boiler. Each retort has a dedicated delivery or conveyor auger, and each of these augers is fitted with an inverter-controlled motor or drive to meter wood pellet fuel into the boiler at the desired rate. Each delivery auger collects wood pellets from a common transfer box or small hopper mounted at the rear of the boiler. The level of the pellet feed within the transfer box is regulated to maintain a break or gap between the delivery augers at the bottom and the fill system, which transfers pellets from the fuel store to the top of the transfer box.

Each delivery auger is also fitted with two separate safety thermostats to protect against the possibility of fuel burn back.

Combustion Air is supplied from one of two fans fitted to the boiler. The Forced Draught (FD) fan is mounted on the floor between the delivery augers and has an inverter-controlled drive motor along with a motorised damper arrangement. An Induced Draft (ID) fan is fitted in the ductwork at the outlet of the cyclone set, which draws secondary combustion air into the furnace of the boiler as well as assisting with the flow of the products of combustion through the boiler and associated cyclone. The ID fan is also fitted with an inverter-controlled motor and is also influenced by a motorised damper mounted into the inlet of the ID fan.

Air supply is regulated (via a lambda probe mounted in the flue ductwork) to match the fuel feed into the boiler. This ensures optimum boiler efficiency across the firing range of the boiler.

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Under normal operation wood pellet fuel is continually fed from the transfer box of the stoker into the bottom of each retort, the incoming fuel gradually pushing its way up the retort with arrival of fresh fuel. Assuming ignition has been established (see below) the wood pellet fuel burns as it passes upward through each retort, combustion air being supplied through a series of holes or tuyeres fitted into the side and around the edges of each retort. Any incombustible material or ash collects - typically toward the rear of the boiler behind each retort - on the generously sized hearth. It requires periodic removal typically every other week.

The stoker automatically adjusts the fuel feed to match the boiler load. Continuous O_2 monitoring of the flue gases ensures close control of combustion as the air supply is adjusted to match the fuel feed.

The Boiler/Stoker standard design has an airless kindle feature (boiler "stand-by" mode when heat is not required for up to 72hours). In addition it can be supplied with fully automatic ignition. However once ignition has been established and the boiler allowed to fire as described above it is envisaged that the kindle feature is utilised to maintain the ignition source within each retort when there is no call on the boiler or when the boiler satisfies its set point requirement. As a consequence, where fitted, the auto ignition is used infrequently.

The Stoker is controlled via a panel, which can be mounted on the boiler or on a wall adjacent to the boiler and displays the boiler operating condition, set points along with boiler operating temperature, flue gas temperature and O_2 readings.

The Stoker control operates via a flow temperature sensor mounted in the flow connection off the boiler, which includes a control thermostat. In addition the boiler has two further thermostats mounted within a pocket close to the flow connection. One is connected to a separate temperature gauge fitted to the boiler and the other is set as a high limit control. A safety valve is supplied to be mounted on the boiler.

In addition to the above mounted within the waterways of the STU boiler is a small separate heat exchanger or thermal safety overload device, designed to quickly reduce the system temperature in the event of overheating. This requires an independent cold water supply and is controlled by a thermostatic valve via signal from the boiler thermostats.

The STU boiler range has been tested using the procedure as set out in BS EN 303-5. This is designed to confirm boiler outputs at both full and part load, and ensures that it does so in a safe manner. In addition it confirms operating efficiencies and gives an indication of anticipated emissions from the boiler in operation and is classed accordingly. With respect to both efficiency and emissions the STU 800 fully meets the highest or Class 3 within this standard.

The standard boiler design does not incorporate automatic removal of ash from the combustion chamber nor an automated heat exchange cleaning system. Some manual intervention is anticipated the extent of which depends mainly on boiler load but also on the quality of fuel used. Experience would suggest that ash would need to be removed after 10 days operation, and the heat exchanger cleaned after 6-8 weeks running. Neither task is particularly onerous and full instruction and training for all operators and staff would be provided on hand-over to client.

Summary Technical Data as follows

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Boiler Type	STU 800
Combustion System	Twin Underfeed Stoker
Fuel Type	Wood Pellet Fuel[1]
Nominal Output Range	800 – 270 kW
Peak Output Required	700 kW
Minimum Output	270 kW[2]
Boiler Water Operating Temperatures	Maximum Flow 90°C. Minimum Return 60°C. Design Flow/Return 82/65 °C.
Operating Pressure	Maximum Working 3 bar. Test Pressure 4.5 bar.
Construction	Generally to BS 855 (SEP). Welded Steel Shell. Refractory lined combustion chamber. Three pass heat exchange. Stainless steel retarders fitted in each smoke tube. Modular twin cyclone.
Safety Features	Stoker Burn Back Thermostat (integrated into Stoker Control) on each Delivery Auger. Burn Back Thermostat with Water Dump independent of Stoker control on each Delivery Auger. Thermal Safety Overload Heat Exchanger independent of Stoker control. Tested BS EN 303-5, Report SP 'Test of Operational Safety' available with full details.
Combustion Boiler Efficiency	Wood Pellet Consumption (700kW) 165 kg/hr[3] Full Load $C0_2$ 13 – 15 % (O_2 5.5 - 7.5%) Full Load Flue Gas Temperature 150 - 160°C Flue Gas Mass Flow 1530 kg/hr Full Load 91.4% (nCV basis) Part Load 91.0% (nCV basis)
Control	Modulating Fuel Feed Across Firing Range, O_2 monitored with λ probe for close combustion control. Inverter controlled fuel feed Inverter control on both FD and ID Fan Additional motorised damper control on FD and ID fans Flue Gas Temperature monitor (ignition control) Stoker BMS enabled, (Modbus options)
Indicative Emissions at Full Load corrected to 10% O_2	CO 70 mg/m^3 Particulate (PM10) 30 mg/m^3 NO_x 200 mg/m^3
Hydraulic Information	Boiler water content 2590 litres Appropriate Flow (Full Output) 11.15 kg/s[4] Boiler Hydraulic Resistance 2.4 kPa[4]
Electrical Supply	415 Volt/3 phase/50Hz supply required, fused at 32 Amp. Delivery Augers Motor (x 2) max 0.37kW Each Bunker Mounted Pick up 0.37kW Common Flexible Auger From Pick-Up to Transfer Box 0.75kW FD Fan Motor max 2.2kW (low voltage motorised damper control) ID Fan Motor max 3kW (low voltage motorised damper control) Electric Hot Air Ignition Guns (x2) 3 kW

[1] Wood Pellet should be from a virgin or clean wood source.
[2] Based on a minimum flue gas temperature at low fire.
[3] Assuming typical Wood Pellet Calorific Value, Typical Boiler Operating Efficiency.
[4] Based on design flow/return temperatures, or 15K ΔT.

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Fuel Specification

The STU Boiler has been designed to operate on Wood Pellet fuel. The pellets should be formed from CLEAN or VIRGIN TIMBER and to the specification outlined in wood pellet specification CEN/TS 14961.

Typically the wood pellet fuel would have the following As Received properties,

Calorific Value (min) nCV basis (CV)	17,000 kJ/kg, or 4.72 kWh/kg
Mechanical Durability (DU)	> 97.5%
Ash Content (A)	< 1.0%
Moisture Content (M)	< 10 %
Size Diameter (D) Length	 D 06, Diameter 6mm (preferred)[1] 20 – 30mm
Sulphur Content (S)	<0.05%
Fines (- 3.15mm into vehicle) (F)	< 1.0%
Bulk Density	650 kg/m^3

[1] Provided they meet the other criteria, 8mm diameter pellets may be acceptable.

Fuel Delivery

Wood Pellet fuel to be delivered by specialist vehicle as utilised by the appointed fuel supplier to the site.

Fuel delivery via bulk blower vehicles (payload typically +16 tonnes). The delivery vehicles would be either rigid body (3 axle) or articulated vehicles fitted with suitable low pressure blowers. Flexible hose (100mm diameter) would be utilised (carried on the vehicle) which connects via a common coupling piece (eg a Storz fitting) to one of four fixed delivery pipes installed into the fuel store. Conveying air to be filtered prior to discharge to the environment.

Potential local fuel suppliers include ;

Balcas 028 6641 1001
Clifford Jones Timber 01824 702157

There may be other local suppliers and Hoval do not endorse any particular wood pellet manufacturer, however it is recommended that fuel is supplied against the specification indicated, and the supplier operates well maintained vehicles and fully trained delivery drivers to ensure that the boiler and fuel transfer system are presented with well sized wood pellets, which are free from any contamination.

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Fuel Store and Wood Pellet Recovery

Located adjacent to the biomass boiler plant room in part of the area previously designated for the hook-lift bin store, we would propose construction, (by others, using suitable materials) a purpose built fuel storage area, approximately 6.6m(L) x 5(W) x 3.3m(H).

Four number bunker pick-up augers to be fitted at even intervals along the 6.6m length of the store, mounted across the full width of the bunker. The bunker would be complete with steel profiling from bunker wall to auger and between each auger to maximise pellet recovery from the volume identified. This would deliver an estimated recoverable volume approaching 75m^3 and should give a total bunker capacity of 40 – 45 tonnes of wood pellet fuel. During periods of heavy use this would mean scheduling a bulk delivery (+16 tonne) once per week. Delivery frequency would of course vary with load placed on boiler.

The bunker would be located behind roller shutter doors fitted to the exterior of the building and would be complete with 4 number 100mm diameter fuel delivery fill pipes, each with suitable coupling (eg Storz) to match that of delivery vehicle. Fill pipes to be located such that they discharge pellets above each of the pick-up augers at a high level position to ensure an even fill across the bunker.

During fuel delivery one fill pipe at a time to be utilised, The other fill pipes used to discharge conveying air via a simple portable filter arrangement – typically supplied by the fuel delivery vehicle, to prevent dust nuisance.
The bunker would need to be fully sealed to prevent

a) moisture ingress
b) escaping dust during delivery

It should have outward opening access door, i.e. a sealed door with 'bunker boards' located behind.

It should have some glass brick or other smooth transparent feature to allow operators to check level of wood pellet fuel held within the bunker.

Note access into bunker would be restricted and door would be kept locked.

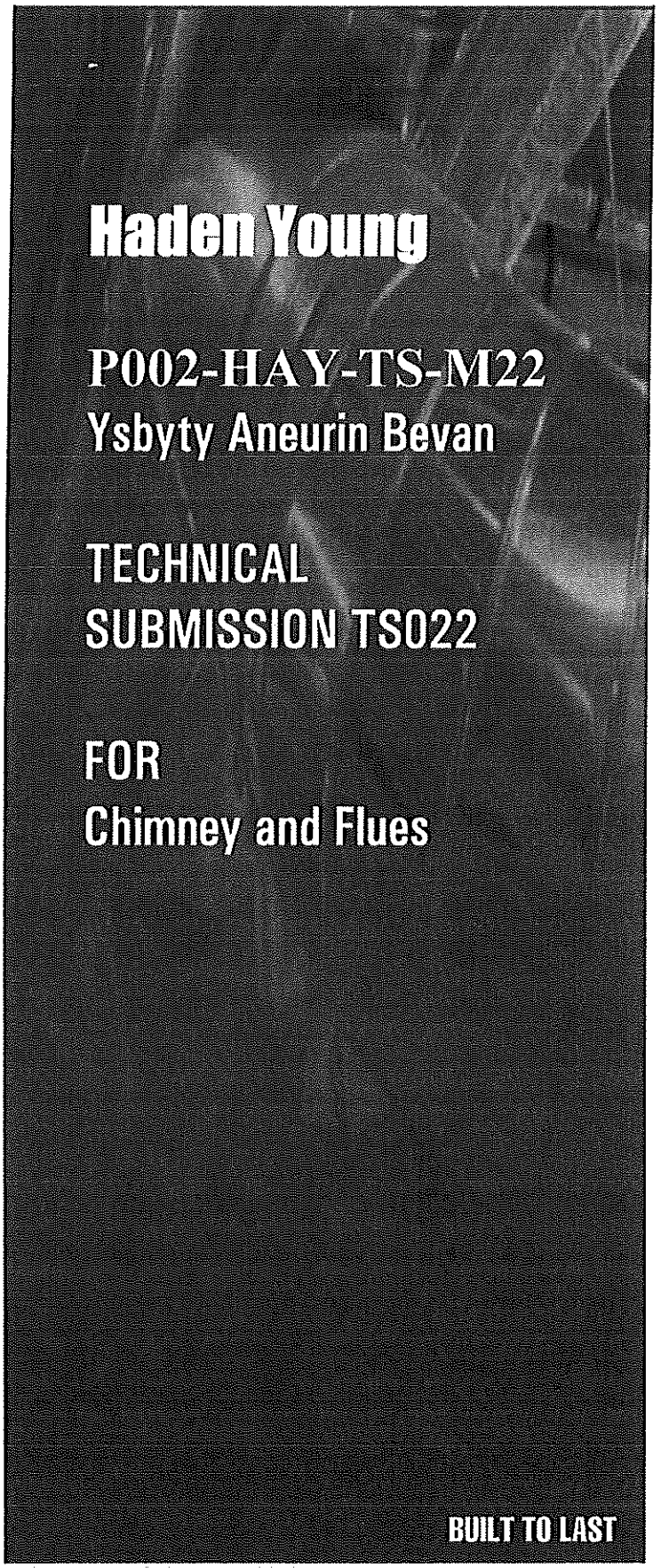
Wood Pellet Fuel Transfer System

Each of the (4) bunker pick-up augers would discharge wood pellets through a small individual transfer box located in the existing trench running along the length of the fuel store into a common single flexible (centreless) auger system. The flexible auger collects and carries the wood pellet fuel to the transfer box of the stoker located at the rear of the boiler and is driven by a fixed speed motor mounted on the top of the transfer box on the stoker. Only one bunker pick-up auger would be operate at a time, with a programmed rotation of each to ensure even run down of the bunker.

A proximity switch mounted within the Transfer box of the stoker would drive the operation of the flexible auger transfer system, similarly proximity switches mounted in the small transfer boxes on each of the bunker pick-ups energise the selected pick-up to operate.

Accumulator (Buffer Vessel)

A suitably sized buffer vessel will be provided to allow biomass boiler to operate under low load conditions, and allow some dissipation on biomass boiler shut down. Headroom restrictions will influence capacity of the vessel. Note desired 10,000 litres from ARUP. Will confirm if this is achievable in the (vertical) space available.



Haden Young

P002-HAY-TS-M22
Ysbyty Aneurin Bevan

TECHNICAL SUBMISSION TS022

FOR
Chimney and Flues

BUILT TO LAST

Haden Young
Major M&E Contractor
Winner 2001 2002 2003

Summary of Submission

		Notes
Section A	Chimney Centres quotation.	
Section B	Provisional Design Information for 14m High Bracket Support Mast	
Section C	Layout Sketch	

SECTION A

Chimney Centres quotation.

- SPECIALIST STOCKIST, DESIGNERS AND ERECTORS OF CHIMNEY PRODUCTS
- FREESTANDING STRUCTURES
- FAN DILUTION ■ CHP EXHAUST
- BOILER & CHIMNEY PACKAGED INSTALLATIONS

CHIMNEY CENTRES
(ENGINEERING) LIMITED

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Central Park Trading Estate
Petherton Road, Hengrove
Bristol BS14 9BZ

Tel: (01275) 541155
(01275) 892070

Fax: (01275) 541200
(01275) 892960

Haden Young Limited
Hillside House
1500 Bristol Parkway North
Newbrick Road
Stoke Gifford
Bristol
BS34 8YU

13 February 2009

For the attention of Mr I Marshall

Your Ref:
Our Ref: SE08/027/2/Reva

Dear Sir,

Re: Ysbty Aneurin Bevan Hospital

Further to your recent enquiry regarding the chimneys at the above site, we have pleasure in submitting our revised quotation.

The basis of the quotation is to supply, deliver and erect the chimneys serving the Biomass and heating boilers.

We include for site survey and drawings. However please find attached our proposals and structural details for the chimney and our mast.

All product is grade 316 stainless steel inner, seam welded, flanged complete with vee bands, 25mm insulation, 304 outer.

Connect 2 No. condensing boilers to a common header allowing approximately 6.4m horizontal, turn through 90 degree to the base tee, drain tee cap and rise to above.

Complete with supports, tees, elbows and top stubs. Allow overall height from floor level to top 14.0m.

Connect 1 No. Biomass chimney with purpose adaptor turn through 90 degree and back to base tee, drain tee cap and rise as condensing chimney.

All product is four hour fire rated.

2 No. chimney to be supported off 1 No. self supporting mast 14.0m overall height x 273 CHS.

Complete with mild steel base plate and gussets, cap plate and brackets. For lightening protection the mast will be made electrically continous, to base with an earthing boss at the base plate structure to be manually cleared and painted with 2 No. coat aluminium.

We would like to draw to your attention the following which are excluded from our quotation.

- Waste pipes
- Scaffold
- Builder's work
- Earthing
- Roof flashing
- Any additional 'building' steelwork for bolting chimney structure

Our quotation is also based upon the following assumptions:

- Normal working hours
- Free power and light
- Free and safe storage of materials, if applicable
- Suitable adjacent hard standing for a crane within 15.0m.

We trust that the above meets with your approval and should any further information be required, please do not hesitate to contact us.

We look forward to hearing from you shortly.

Yours faithfully

R O W Hawkins
Chimney Centres Engineering Limited

SECTION B

Provisional Design Information for 14m High Bracket Support Mast

Chimney Centres (Engineering) Limited

T.: 01275 541 115 F.: 01275 541 200

Email: sales@chimney-centres.co.uk

Provisional Design Information For 14m High Bracket Supported Mast

Site: Ysbyty Aneurin Bevan, Blaenau Gwent

Client: Haden Young Limited (Midlands & Southern Region)

Date: 29th January 2009

Description:

A 14m high support mast is to carry two 500mm o/d twin wall flues. The mast is supported at it's base at the +275.6m level, restrained laterally to a building at the +283.45m level and terminates at the +289.6m level.

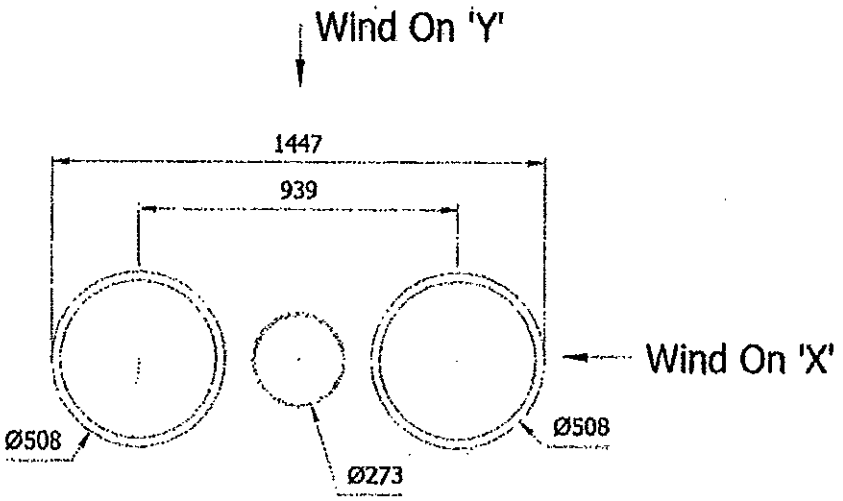
The mast is enclosed within a building below the +279.65m level (lower 4.05m + up-stand).

See sketch for layout (Page 6).

Wind Loading:

An initial assessment to BS6399-2 has been made without visiting site or assessing the surroundings, BREVE 2 software has been used to determine the wind speed at the top of the mast and this has been applied to the remainder. A detailed design will reduce the wind coming down the structure and so the reactions.

Two wind directions are considered, wind on the full face 'Y' and wind on the side face 'X'.



Chimney Centres (Engineering) Limited

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Provisional Design Information For 14m High Bracket Supported Mast

Design Standards:

For provisional reactions BS6399-2 has been used, however the mast design would be carried out in accordance with BS EN 13084-8:2005 (Free standing industrial chimneys – part 8: design & execution of mast construction with satellite components), and as such BS EN 1991-1-4:2005 (actions on structures – wind) and NA:2008 would be used to assess the wind loading for a working design.

(A design check will be performed applying BS4076:1989 and treating the mast as a chimney carrying external components in combination with the greater loads of CP3 or BS6399-2, this check will be a brief foot note summary.)

Software:

Autodesk Inventor Professional 2009 – 3D modelling and component stress analysis with Ansys and Advanced Simulation Technology Preview (Plassotech)

Autodesk Robot Structural Analysis Professional 2009 – Frame design + FEM plates & solids

Autodesk Autocad Mechanical 2009 – 2D Mechanical draughting

Bespoke Chimney Pack Version 2.8 – In house chimney design software

Any or all of the above packages maybe utilised to carry out this work.

Provisional Loads:

Initial pre order assessment carried out with wind based on BS6399-2 and the resulting loads applied to a 3d stick model within 'Robot Structural Analysis Professional 2009', two combination load cases were prepared without load factor i.e. wind x1.0 and self weight x 1.0 to provide actual loads at the relative positions. Combination case (comb1) for wind on 'Y' + self weight and combination case (comb2) for wind on 'X' + self weight.

BS EN 13084-8:2005 has been used to determine appropriate force coefficients.

UCS Adopted

Z= Vertical

X& Y = Horizontal

Chimney Centres (Engineering) Limited

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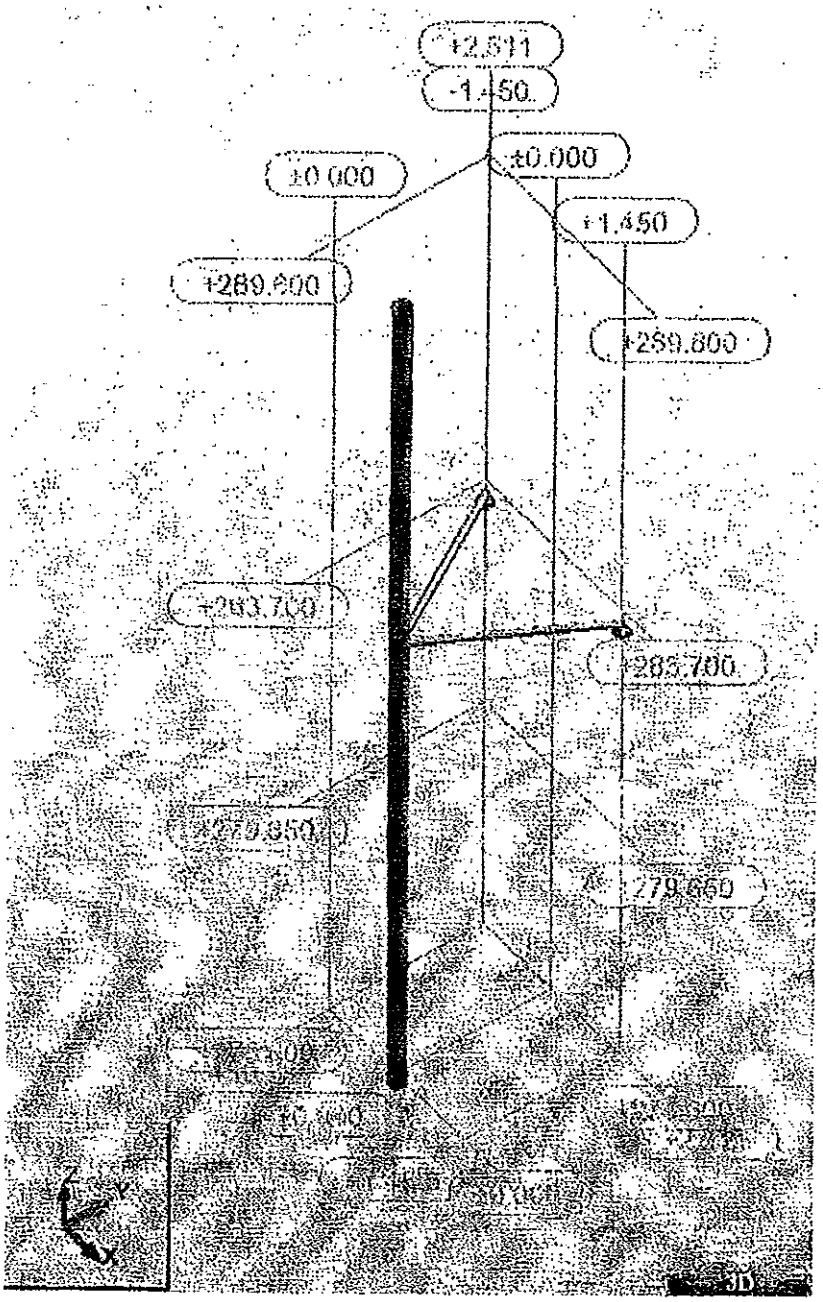
Provisional Design Information For 14m High Bracket Supported Mast



Set Out

Chimney Centres (Engineering) Limited

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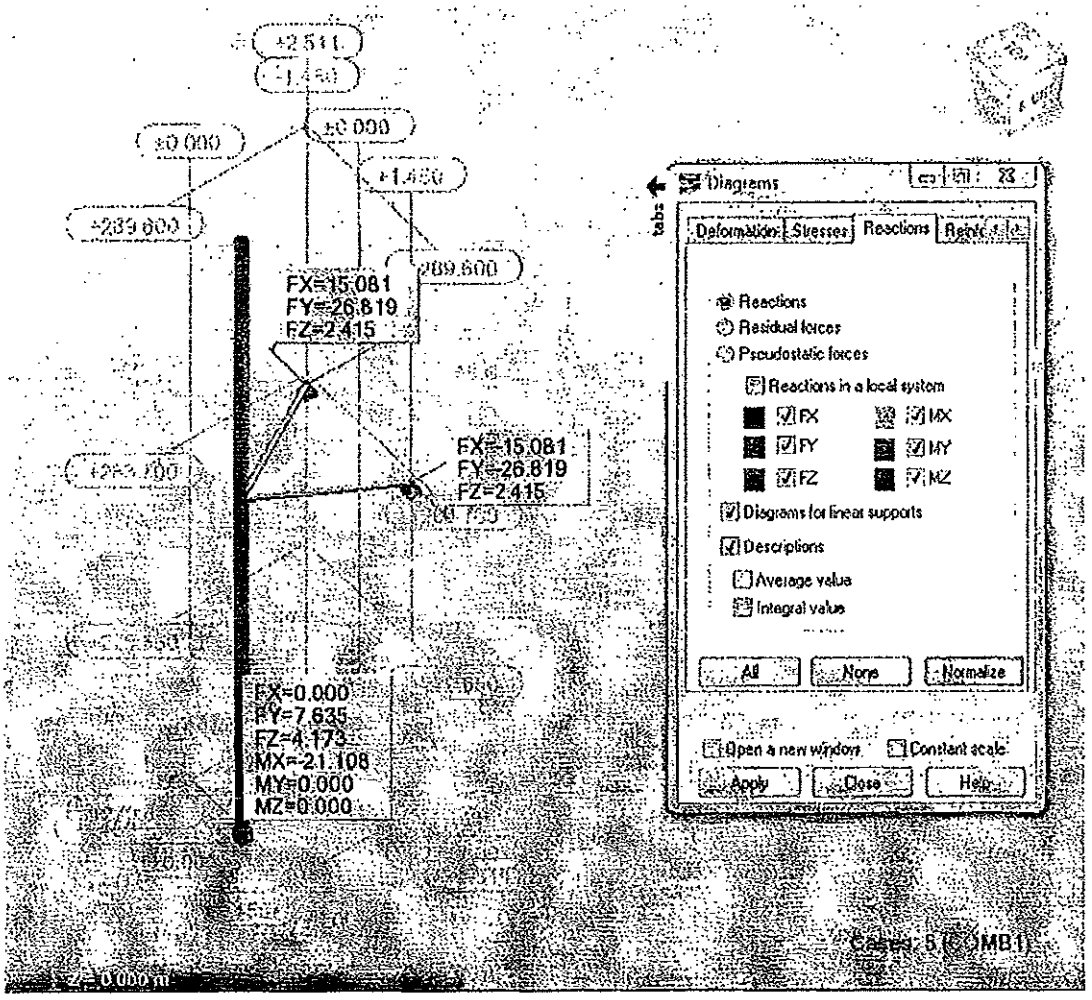
Email: sales@chimney-centres.co.uk

Provisional Design Information For 14m High Bracket Supported Mast



Reactions For Combination 1 (COMB1) – Load Factors x 1.0

Note wind direction can be + Y or -Y

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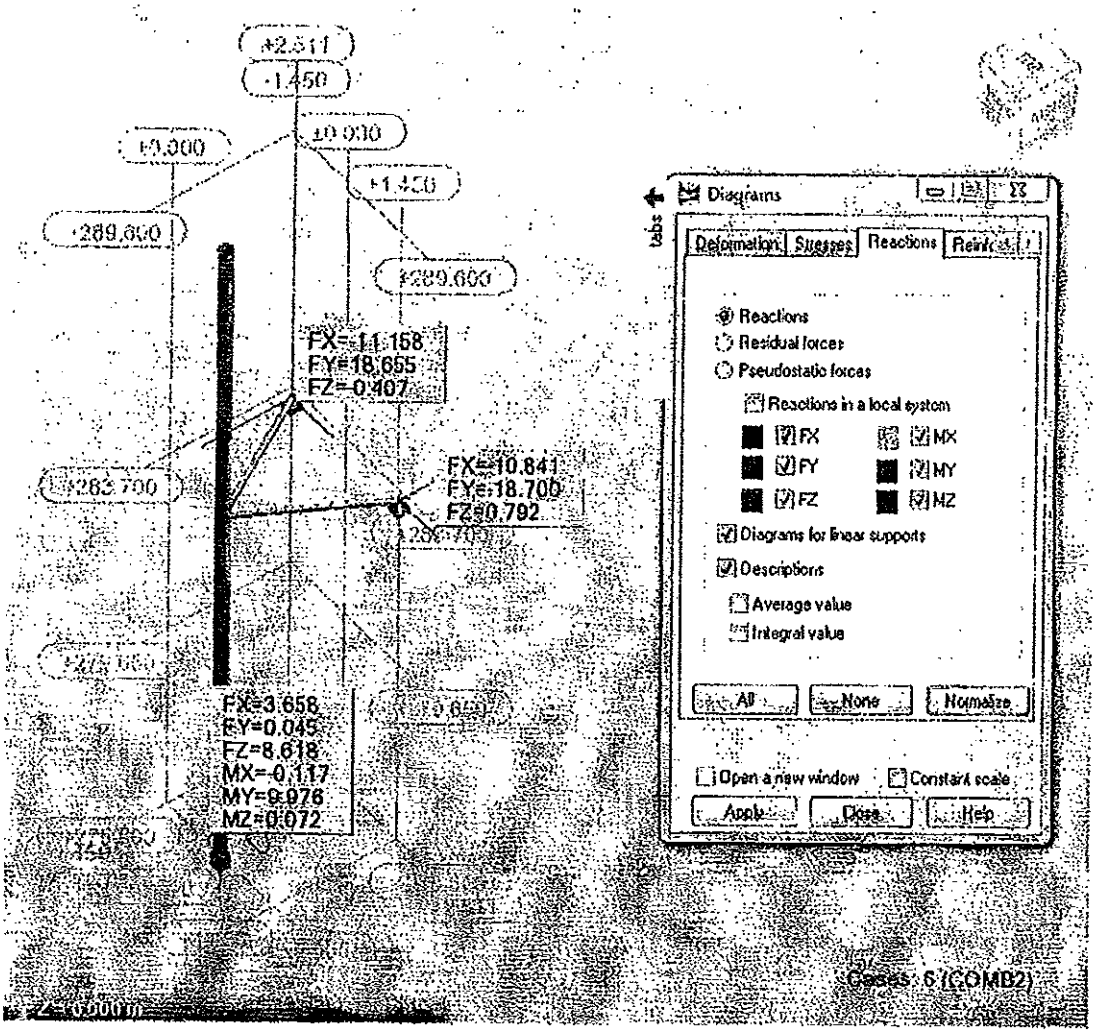
Provisional Design Information For 14m High Bracket Supported Mast



Reactions For Combination 2 (COMB2) – Load Factors x 1.0

Note wind direction can be + X or –X

Surrounding Building Effects Have Not Been Considered At This Time

SECTION C

Layout Sketch

Chimney Centres (Engineering) Limited

Layout Sketch - Ysbyty Aneurin Bevan, Baenau Gwent

Client - Haden Young Limited (Midlands & Sothern Region)

Date: January 2009

Drawn - CP

Provisional Layout On Plan (1:75 @ A4)