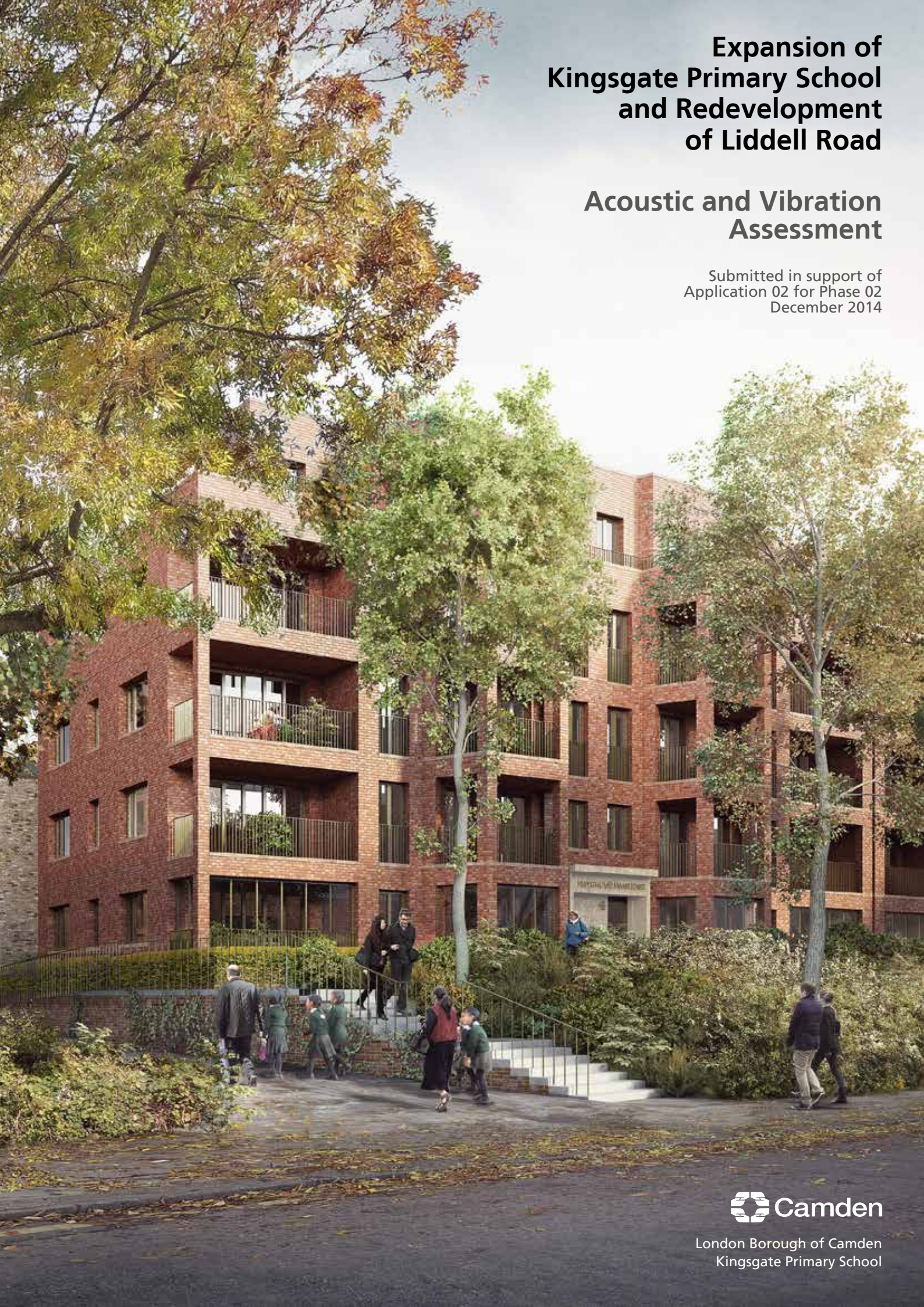
# Expansion of Kingsgate Primary School and Redevelopment of Liddell Road

## Acoustic and Vibration Assessment

Submitted in support of
Application 02 for Phase 02
December 2014



Camden

London Borough of Camden
Kingsgate Primary School

GILLIERON SCOTT
ACOUSTIC DESIGN

Report No. Liddell Road – Phase 2 Acoustic Report.doc

For: London Borough of Camden

## Application 02

## Expansion of Kingsgate Primary School & Redevelopment of Liddell Road – Phase 2

# ENVIRONMENTAL NOISE AND VIBRATION REPORT

Compiled by ..... Tim Scott BSc MIOA Date: 05/12/2014

Checked by: ..... Paul Gillieron BSc MIOA Date: 05/12/2014

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## 1.0 INTRODUCTION

As a part of the acoustic design of the proposed development at Liddell Road, Camden, London, Gillieron Scott Acoustic Design (GSAD) have been commissioned to undertake an acoustic assessment and if required specify appropriate mitigation to achieve suitable internal noise levels to satisfy building control and local Camden council noise criteria.

It is proposed that the site will be constructed in two phases. The first phase will be the construction of Kingsgate Primary School and the enabling works for phase two. Phase two will comprise of two residential buildings and one commercial building. The site currently contains numerous commercial buildings which will be demolished to make way for the new development.

There is a railway on the northern boundary of the site which dominates the existing noise environment. Train passes are frequent; approximately 2-3 every five minutes during the day, in addition freight trains pass on the tracks nearest to the boundary approximately every 2 hours.

Liddell Road lies to the south and has light traffic flow during the day.

This report discusses the acoustic implications for Phase 2, a separate report has been issued for Phase 1.

This report has been prepared for the London Borough of Camden by Tim Scott of GSAD.

A detailed glossary of terminology used in this report, is provided in the Appendix.

# 2.0 LOCAL AUTHORITY POLICY AND GUIDANCE

## 2.1 Residential Acoustic Design Criteria

Local authority planning policy and typical design standards as detailed below have been used as deign guidance for the recommendations contained within this report.

### 2.1.1 Camden Council Noise and Vibration Policy

Noise and vibration can have a major effect on amenity and health and therefore quality of life. Camden's high density and mixed-use nature means that disturbance from noise and vibration is a particularly important issue in the borough. Camden's Core Strategy recognises the importance of this issue for Camden's residents and policy DP28 contributes to implementing a number of Core Strategy policies, including CS5 - *Managing the impact of growth and development,* CS9 - *Achieving a successful Central London*, CS11 - *Promoting sustainable and efficient travel* and CS16 - *Improving Camden's health and well-being*.

**Policy DP28 - Noise and Vibration**

The Council will seek to ensure that noise and vibration is controlled and managed and will not grant planning permission for:

a. development likely to generate noise pollution; or
b. development sensitive to noise in locations with noise pollution, unless appropriate attenuation measures are provided.

Development that exceeds Camden's Noise and Vibration Thresholds will not be permitted.
The Council will only grant permission for plant or machinery if it can be operated without cause harm to amenity and does not exceed our noise thresholds.

The Council will seek to minimise the impact on local amenity from the demolition and construction phases of development. Where these phases are likely to cause harm, conditions and planning obligations may be used to minimise the impact.

The effect of noise and vibration can be minimised by separating uses sensitive to noise from development that generates noise and by taking measures to reduce any impact. Noise sensitive development includes housing, schools and hospitals as well as offices, workshops and open spaces, while noise is generated by rail, road and air traffic, industry, entertainment (e.g. nightclubs, restaurants and bars) and other uses.

The Council will only grant planning permission for development sensitive to noise in locations that experience noise pollution, and for development likely to generate noise pollution, if appropriate attenuation measures are taken, such as double-glazing. Planning permission will not be granted for development sensitive to noise in locations that have unacceptable levels of noise.

Where uses sensitive to noise are proposed close to an existing source of noise or when development that generates noise is proposed, the Council will require an acoustic report to ensure compliance with PPG24: *Planning and noise*. A condition will be imposed to require that the plant and equipment which may be a source of noise pollution is kept working efficiently and within the required noise limits and time restrictions.

Conditions may also be imposed to ensure that attenuation measures are kept in place and effective throughout the life of the development.

In assessing applications, we will have regard to the Noise and Vibration Thresholds, set out below. These represent an interpretation of the standards in PPG24 and include an evening period in addition to the day and night standards contained in PPG24, which provide a greater degree of control over noise and vibration during a period when noise is often an issue in the borough.

**Table A: Noise levels on residential sites adjoining railways and roads at which planning permission will not be granted**

| Noise description and location of measurement | Period | Time | Sites adjoining railways | Sites adjoining roads |
|---|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day | 0700-1900 | 74 dB LAeq'12h | 72 dB LAeq'12h |
| Noise at 1 metre external to a sensitive façade | Evening | 1900-2300 | 74 dB LAeq'4h | 72 dB LAeq'4h |
| Noise at 1 metre external to a sensitive façade | Night | 2300-0700 | 66 dB LAeq'8h | 66 dB LAeq'8h |

**Table B: Noise levels on residential streets adjoining railways and roads at and above which attenuation measures will be required**

| Noise description and location of measurement | Period | Time | Sites adjoining railways | Sites adjoining roads |
|---|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day | 0700-1900 | 65 dB LAeq'12h | 62 dB LAeq'12h |
| Noise at 1 metre external to a sensitive façade | Evening | 1900-2300 | 60 dB LAeq'$^4$h | 57 dB LAeq'$^4$h |
| Noise at 1 metre external to a sensitive façade | Night | 2300-0700 | 55 dB LAeq'1h | 52 dB LAeq'1h |
| Individual noise events several times an hour | Night | 2300-0700 | >82dB LAmax (S time weighting) | >82dB LAmax (S time weighting) |

**Table C: Vibration levels on residential sites adjoining railways and roads at which planning permission will not be granted**

| Vibration description and location of measurement | Period | Time | Vibration levels |
|---|---|---|---|
| Vibration inside critical areas such as a hospital operating theatre | Day, evening and night | 0000-2400 | 0.1 VDV $ms^{-1.75}$ |
| Vibration inside dwellings | Day and evening | 0700-2300 | 0.2 to 0.4 VDV $ms^{-1.75}$ |
| Vibration inside dwellings | Night | 2300-0700 | 0.13 VDV $ms^{-1.75}$ |
| Vibration inside offices | Day, evening and night | 0000-2400 | 0.4 VDV $ms^{-1.75}$ |
| Vibration inside workshops | Day, evening and night | 0000-2400 | 0.8 VDV $ms^{-1.75}$ |

Where dwellings may be affected by ground-borne regenerated noise internally from, for example, railways or underground trains within tunnels, noise levels within the rooms should not be greater than 35dB(A)max.

**Table D: Noise levels from places of entertainment on adjoining residential sites at which planning permission will not be granted**

| Noise description and measurement location | Period | Time | Sites adjoining places of entertainment |
|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day and evening | 0700-2300 | LAeq, 5m shall not increase by more than 5dB* |
| Noise at 1 metre external to a sensitive façade | Night | 2300-0700 | LAeq, 5m shall not increase by more than 3dB* |
| Noise inside any living room of any noise sensitive premises, with the windows open or closed | Night | 2300-0700 | LAeq, 5m (in the 63Hz Octave band measured using the 'fast' time constant) should show no increase in dB* |

* As compared to the same measure, from the same position, and over a comparable period, with no entertainment taking place

**Table E: Noise levels from plant and machinery at which planning permission will not be granted**

| Noise description and location of measurement | Period | Time | Noise level |
|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day, evening and night | 0000-2400 | 5dB(A) <LA90 |
| Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 |
| Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 |
| Noise at 1 metre external to sensitive façade where LA90>60dB | Day, evening and night | 0000-2400 | 55dB$_{LAeq}$ |

**Key references / evidence**

- Camden's Noise Strategy, 2002
- The London Plan (Consolidated with Alterations since 2004), 2008
- Planning Policy Guidance 24: Planning and noise

### 2.1.2 Applicable Standards

### 2.1.3 BS8233: 2014: Noise Break In From The Exterior

British Standard BS8233:2014 provides information on the design of internal acoustics in buildings. The document gives recommended internal noise levels in residential dwellings. The recommendations are shown if Table F below.

**Table F: Internal noise limits in residential dwellings**

| Activity | Location | 07:00 to 23:00 | 23:00 to 07:00 |
|---|---|---|---|
| Resting | Living Room | 35 dB $L_{Aeq,16hour}$ | - |
| Dining | Dining room/area | 40 dB $L_{Aeq,16hour}$ | - |
| Sleeping (daytime resting) | Bedroom | 35 dB $L_{Aeq,16hour}$ | 30 dB $L_{Aeq,8hour}$ |

The 2014 revision of BS8233 has removed specific references to a recommended level from individual noise events (measured as $L_{Amax}$). The guidance from the World Health Organisation (WHO) will be used in lieu of a definitive steer in the BS8233:2014 document. A WHO 2000 document recommends the 45 dB $L_{Amax}$ is not regularly exceeded in bedrooms at night. A further WHO document details that more than around 10 events a night would constitute as 'regularly exceeded'**.** The above limits are based on research into the effect of noise on the health and quality of life of occupants subjected to noise. 'High end' developments where expectations of noise intrusion are often higher may require a higher standard.

Notes;

- Day time relates to 0700-2300 hours and Night-time to 2300-0700.

### 2.1.4 BS4142: Plant Noise Limits

As per the limits stipulated in section 2.1 Table E noise levels emanating from any proposed items of plant should be designed to be 5dBA below the lowest measured background noise level during the hours of operation at the nearest noise sensitive residential properties.

An assessment in accordance with the methodology of BS4142 should be carried out in the later design stages once all items of plant and their locations have been designed.

### 2.1.5: World Health Organisation: Guidelines for Community Noise

The WHO document describes guideline levels that are "essentially values for the onset of health effects from noise exposure".
Guideline values are given below and relate to adverse health effects, referred to as any temporary or long term deterioration in physical, psychological, or social functioning that is associated with noise exposure.

The limits below give guidance for community noise in specific environments,

**Outdoor living area**

Serious annoyance, daytime and evening > 55dB $L_{Aeq,T}$
Moderate annoyance, daytime and evening > 50dB $L_{Aeq,T}$

**Dwelling, indoors**

Speech intelligibility and moderate annoyance, daytime and evening, less than 35 dB $L_{Aeq,T}$

Inside bedrooms Sleep disturbance, night-times, less than 30dB $L_{Aeq,T}$ 45dB $L_{Amax}$

**Outside bedrooms(Night time)**

Sleep disturbance, window open (outdoor values), less than 45 $L_{Amax}$ (60dB $L_{Amax}$)

## 2.2 Commercial/Office Acoustic Design Criteria

### 2.2.1 BREEAM Design Targets

Indoor ambient noise levels in unoccupied staff/office areas must comply with the following:

a. ≤ 40 dB $L_{Aeq,T}$ in single occupancy offices.
b. 40-50 dB $L_{Aeq,T}$ in multiple occupancy offices.
c. ≤ 40 dB $L_{Aeq,T}$ general spaces (staffrooms, restrooms).
d. ≤ 35 dB $L_{Aeq,T}$ in spaces designed for speech e.g. seminar/lecture rooms.
e. ≤ 50 dB $L_{Aeq,T}$ in informal café/canteen areas.

### 2.2.2 British Council for Offices (BCO) Guidance

External noise intrusion levels should, after attenuation by the composite building envelope, not exceed the following acoustic design criteria when measured under Category A standards for offices (including carpets).

**Table G: Internal BCO Noise Limits**

| Room | Design Criterion $L_{eq}$ |
|---|---|
| Open Plan Office | NR40 |
| Speculative Offices | NR38 |
| Cellular Offices | NR35 |

### 2.2.3 Vibration

Typical vibration levels and limits for offices below are set out below.

**Table H: VDV Vibration dose limits**

| Vibration description and location of measurement | Period | Time | Vibration levels |
|---|---|---|---|
| Vibration inside dwellings | Day and Evening | 0700-2300 | 0.2 to 0.4 VDV $ms^{-1.75}$ |
| Vibration inside dwellings | Night | 2300-0700 | 0.13 VDV $ms^{-1.75}$ |
| Vibration inside offices Day, evening and night | Day, Evening and Night | 0000-2400 | 0.4 VDV $ms^{-1.75}$ |
| Vibration inside workshops Day, evening and night | Day, Evening and Night | 0000-2400 | 0.8 VDV $ms^{-1.75}$ |

# 3.0 NOISE SURVEY DETAILS

## 3.1 Noise Survey Positions

Extended unmanned noise surveys have been undertaken at the railway boundary and at the southern façade of the existing commercial units to the south of the site.

Locations are shown on the aerial view in Appendix A.

**Position A** – Northern Railway Boundary to the rear of commercial Unit 12. Noise in this location is dominated by the railway.

**Airborne Noise:** The equipment was set up to measure sound levels at 15 minute intervals between 16:00, Tuesday 14th October 2014 and 13.15, Friday 17th October 2014.

**Position B** – Southern Site Boundary to the south of commercial Unit 22.

It is recommended that a repeat airborne noise survey is undertaken in position B if planning consent is granted and the commercial units are removed as the noise levels are currently contaminated by the operation of the existing commercial units.

**Airborne Noise:** The equipment was set up to measure sound levels at 15 minute intervals between 16:00, Tuesday 14th October 2014 and 13.15, Friday 17th October 2014.

Details of the measurement equipment and procedure used are shown in Appendix.

## 3.2 Noise indices

The equipment was set to record octave band sound pressure levels at 15minute intervals. The following noise indices used in this assessment are as follows:

$L_{Aeq,T}$: The A-weighted equivalent continuous sound pressure level over a period of time, T.

$L_{Amax,T}$: The A-weighted maximum sound pressure level that occurred during a given period. Measured using the fast ($L_{AFmax}$) or slow ($L_{ASmax}$) time weightings.

$L_{A90,T}$: The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background noise level.

$L_{A1,T}$: The A-weighted sound pressure level exceeded for 1% of the measurement period. Indicative of the maximum noise level.

The $L_{A90}$ is considered most representative of the background noise level for the purposes of complying with any Local Authority requirements.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg $L_{A90}$) to approximate the frequency response of the human ear.

### 3.3 Site Survey Weather Conditions

During the unattended noise measurements between Tuesday 14th October 2014 and Friday 17th October 2014, weather reports for the area indicated that temperatures varied between 12 °C and 20 °C during the measurement period, and the wind speed was less than 5 m/s.

These weather conditions are considered suitable for representative measurements.

# 4.0 NOISE SURVEY RESULTS

## 4.1. Airborne Noise Survey Results

A summary of the results from the airborne noise survey are given in the section below.

### 4.1.1 Position A – Northern Railway Boundary to the rear of commercial Unit 12

The results of the airborne noise surveys in Position A as are shown in Table I.

**Table I: Summary of survey results Position A – Northern Boundary to the rear of commercial Unit 12**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | $L_{A90}$ dB (Minimum) | $L_{Amax\ (F)}$ dB |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 68.5 | 36.0 | 99.3 |
| 15/10/2014 | 23:00 | 07:00 | Night | 56.5 | 30.9 | 96.8 |
| 15/10/2014 | 07:00 | 19:00 | Day | 70.5 | 44.3 | 104.7 |
| 15/10/2014 | 19:00 | 23:00 | Evening | 69.1 | 42.3 | 98.8 |
| 16/10/2014 | 23:00 | 07:00 | Night | 57.6 | 33.8 | 93.1 |
| 16/10/2014 | 07:00 | 19:00 | Day | 71.0 | 42.2 | 112.5 |
| 16/10/2014 | 19:00 | 23:00 | Evening | 69.3 | 39.7 | 98.4 |
| 17/10/2014 | 23:00 | 07:00 | Night | 56.9 | 35.1 | 94.9 |

### 4.1.2 Position B – Southern Boundary to the rear of commercial Unit 22

The results of the airborne noise surveys in Position B as are shown in Table J.

**Table J: Summary of survey results for Position B – Southern Boundary to the rear of commercial Unit 22**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | $L_{A90}$ dB (Minimum) | $L_{Amax\ (F)}$ dB |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 53.5 | 35.9 | 78.9 |
| 15/10/2014 | 23:00 | 07:00 | Night | 47.1 | 31.0 | 76.8 |
| 15/10/2014 | 07:00 | 19:00 | Day | 60.0 | 42.5 | 92.9 |
| 15/10/2014 | 19:00 | 23:00 | Evening | 58.7 | 46.0 | 80.0 |
| 16/10/2014 | 23:00 | 07:00 | Night | 48.8 | 34.2 | 82.4 |
| 16/10/2014 | 07:00 | 19:00 | Day | 59.6 | 44.2 | 85.5 |
| 16/10/2014 | 19:00 | 23:00 | Evening | 54.2 | 43.1 | 73.6 |
| 17/10/2014 | 23:00 | 07:00 | Night | 49.1 | 37.1 | 76.1 |

The above noise survey measurements have been used to develop a CadnaA noise map of the site which will aid the prediction of the noise levels at all façades of residential and commercial buildings. are removed as the noise levels are currently contaminated by the operation of the existing commercial units.

# 5.0 ASSESSMENT OF NOISE SURVEY RESULTS

## 5.1 Position A – Northern Railway Boundary to the rear of commercial Unit 12

### 5.1.1 External Noise Break In

The results from the airborne noise survey at position A have been compared to the limits set out in Table A above which planning permission will not be granted.

**Table K: Comparison of airborne noise results in Position A with Table A.**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | Limit at and above which planning permission should be denied $L_{Aeq}$ dB | Planning permission should be granted |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 68.5 | 74 | YES |
| 15/10/2014 | 23:00 | 07:00 | Night | 56.5 | 66 | YES |
| 15/10/2014 | 07:00 | 19:00 | Day | 70.5 | 74 | YES |
| 15/10/2014 | 19:00 | 23:00 | Evening | 69.1 | 74 | YES |
| 16/10/2014 | 23:00 | 07:00 | Night | 57.6 | 66 | YES |
| 16/10/2014 | 07:00 | 19:00 | Day | 71.0 | 74 | YES |
| 16/10/2014 | 19:00 | 23:00 | Evening | 69.3 | 74 | YES |
| 17/10/2014 | 23:00 | 07:00 | Night | 56.9 | 66 | YES |

The results show that noise levels on the site at position A are below the limits shown in Table A and it is recommended that planning permission should be granted.

A summary of the results from the airborne noise survey at position A have been compared to the limits set out in Table B at and above which attenuation measures will be required.

**Table L: Comparison of airborne noise results in Position A with Table B**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | Limit at and above which attenuation measures will be required $L_{Aeq}$ dB | Attenuation measures will be required |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 68.5 | 60 | YES |
| 15/10/2014 | 23:00 | 07:00 | Night | 56.5 | 55 | YES |
| 15/10/2014 | 07:00 | 19:00 | Day | 70.5 | 65 | YES |
| 15/10/2014 | 19:00 | 23:00 | Evening | 69.1 | 60 | YES |
| 16/10/2014 | 23:00 | 07:00 | Night | 57.6 | 55 | YES |
| 16/10/2014 | 07:00 | 19:00 | Day | 71.0 | 65 | YES |
| 16/10/2014 | 19:00 | 23:00 | Evening | 69.3 | 60 | YES |
| 17/10/2014 | 23:00 | 07:00 | Night | 56.9 | 55 | YES |

The results show that noise levels on the site at position B are above the limits shown in Table B and acoustic attenuation measures may be required to ensure internal noise levels within dwellings as specified

in section 2 are not exceeded. However, it is recommended that a repeat airborne noise survey is undertaken in position B when the commercial units are removed as the noise levels are currently contaminated by the operation of the existing commercial units.

### 5.1.2 Position A Plant Noise Limits

**Table M: Comparison of airborne noise results in Position A with Table D**

| Noise description and location of measurement | Period | Time | Required Noise level | Limit for all items of new plant |
|---|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day, evening and night | 0000-2400 | 5dB(A) <LA90 | 30.9 dB(A) – 5dB(A) =**25.9dB(A)** |
| Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 | 30.9 dB(A) – 10dB(A) =**20.9dB(A)** |
| Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 | 30.9 dB(A) – 10dB(A) =**20.9dB(A)** |
| Noise at 1 metre external to sensitive façade where LA90>60dB | Day, evening and night | 0000-2400 | 55dB$_{LAeq}$ | n/a |

The above results are taken from measurements conducted over a 24Hr period. If items of plant can be set to switch off between 23:00 and 07:00 (night time) higher limits may be possible

### 5.1.3 External Amenity Noise Position A

Table P below shows the measured external noise levels exceed the recommended WHO limits shown in section 2.1.5 at all times. Hence mitigation will be required to satisfy the recommended external amenity design criteria. A CadnaA noise mapping model has been used to determine mitigation recommendations for external amenity.

**Table N: External noise levels compared to WHO external amenity design criteria – Position A**

| Date | From | Until | Period | $L_{Aeq,T}$ dB | Recommended limit, $L_{Aeq,T}$ dB | $L_{Amax\ (F)}$ dB | Recommended limit, $L_{Amax}$ dB |
|---|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 68.5 | 55 | 99.3 | n/a |
| 15/10/2014 | 23:00 | 07:00 | Night | 56.5 | n/a | 96.8 | 60* |
| 15/10/2014 | 07:00 | 19:00 | Day | 70.5 | 55 | 104.7 | n/a |
| 15/10/2014 | 19:00 | 23:00 | Evening | 69.1 | 55 | 98.8 | n/a |
| 16/10/2014 | 23:00 | 07:00 | Night | 57.6 | n/a | 93.1 | 60* |
| 16/10/2014 | 07:00 | 19:00 | Day | 71.0 | 55 | 112.5 | n/a |
| 16/10/2014 | 19:00 | 23:00 | Evening | 69.3 | 55 | 98.4 | n/a |
| 17/10/2014 | 23:00 | 07:00 | Night | 56.9 | n/a | 94.9 | 60* |

* Windows open

## 5.2 Position B – Southern Boundary to the rear of commercial Unit 22

### 5.2.1 External Noise Break In

The results from the airborne noise survey at position B have been compared to the limits set out in Table A above which planning permission will not be granted.

**Table O: Comparison of airborne noise results in Position B with Table A.**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | Limit at and above which planning permission should be denied $L_{Aeq}$ dB | Planning permission should be granted |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 53.5 | 74 | YES |
| 15/10/2014 | 23:00 | 07:00 | Night | 47.1 | 66 | YES |
| 15/10/2014 | 07:00 | 19:00 | Day | 60.0 | 74 | YES |
| 15/10/2014 | 19:00 | 23:00 | Evening | 58.7 | 74 | YES |
| 16/10/2014 | 23:00 | 07:00 | Night | 48.8 | 66 | YES |
| 16/10/2014 | 07:00 | 19:00 | Day | 59.6 | 74 | YES |
| 16/10/2014 | 19:00 | 23:00 | Evening | 54.2 | 74 | YES |
| 17/10/2014 | 23:00 | 07:00 | Night | 49.1 | 66 | YES |

The results show that noise levels on the site at position B are below the limits shown in Table A and it is recommended that planning permission should be granted.

A summary of the results from the airborne noise survey at position B have been compared to the limits set out in Table B at and above which attenuation measures will be required.

**Table P: Comparison of airborne noise results in Position B with Table B.**

| Date | From | Until | Period | $L_{Aeq}$ dB (Average) | Limit at and above which attenuation measures will be required $L_{Aeq}$ dB | Attenuation measures will be required |
|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 53.5 | 60 | NO |
| 15/10/2014 | 23:00 | 07:00 | Night | 47.1 | 55 | NO |
| 15/10/2014 | 07:00 | 19:00 | Day | 60.0 | 65 | NO |
| 15/10/2014 | 19:00 | 23:00 | Evening | 58.7 | 60 | NO |
| 16/10/2014 | 23:00 | 07:00 | Night | 48.8 | 55 | NO |
| 16/10/2014 | 07:00 | 19:00 | Day | 59.6 | 65 | NO |
| 16/10/2014 | 19:00 | 23:00 | Evening | 54.2 | 60 | NO |
| 17/10/2014 | 23:00 | 07:00 | Night | 49.1 | 55 | NO |

The results show that noise levels on the site at position B are below the limits shown in Table B and acoustic attenuation measures will not be required.

### 5.2.2 Position B Plant Noise Limits

**Table Q: Comparison of airborne noise results in Position B with Table D**

| Noise description and location of measurement | Period | Time | Required Noise level | Limit for all items of new plant |
|---|---|---|---|---|
| Noise at 1 metre external to a sensitive façade | Day, evening and night | 0000-2400 | 5dB(A) <LA90 | 31 dB(A) – 5dB(A) **=26dB(A)** |
| Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 | 31 dB(A) – 10dB(A) **=21dB(A)** |
| Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade. | Day, evening and night | 0000-2400 | 10dB(A) <LA90 | 31 dB(A) – 10dB(A) **=21dB(A)** |
| Noise at 1 metre external to sensitive façade where LA90>60dB | Day, evening and night | 0000-2400 | $55dB_{LAeq}$ | **n/a** |

The above results are taken from measurements conducted over a 24Hr period. If items of plant can be set to switch off between 23:00 and 07:00 (night time) higher limits may be possible

### 5.2.4 External Amenity Noise Position B

Table T below shows the measured external noise levels exceed the recommended WHO limits shown in section 2.1.5 at certain times. Hence mitigation will be required to satisfy the recommended external amenity design criteria. A CadnaA noise mapping model has been used to determine mitigation recommendations for external amenity. It is recommended that a repeat airborne noise survey is undertaken in position B as the day time noise level are currently contaminated by the existing commercial units.

**Table R: External noise levels compared to WHO external amenity design criteria – Position B**

| Date | From | Until | Period | $L_{Aeq}$ dB | Recommended limit, $L_{Aeq,T}$ dB | $L_{Amax\ (F)}$ dB | Recommended limit, $L_{Amax}$ dB |
|---|---|---|---|---|---|---|---|
| 14/10/2014 | 19:00 | 23:00 | Evening | 53.5 | 55 | 78.9 | n/a |
| 15/10/2014 | 23:00 | 07:00 | Night | 47.1 | n/a | 76.8 | 60* |
| 15/10/2014 | 07:00 | 19:00 | Day | 60.0 | 55 | 92.9 | n/a |
| 15/10/2014 | 19:00 | 23:00 | Evening | 58.7 | 55 | 80.0 | n/a |
| 16/10/2014 | 23:00 | 07:00 | Night | 48.8 | n/a | 82.4 | 60* |
| 16/10/2014 | 07:00 | 19:00 | Day | 59.6 | 55 | 85.5 | n/a |
| 16/10/2014 | 19:00 | 23:00 | Evening | 54.2 | 55 | 73.6 | n/a |
| 17/10/2014 | 23:00 | 07:00 | Night | 49.1 | n/a | 76.1 | 60* |

* Windows open

# 6.0 NOISE MITIGATION

It has been recommended that in order to protect lower level windows and outdoor amenity areas of the site a noise barrier is erected to 1st floor level between the proposed site and railway to the North. The CadnaA predictions take into account the construction of the barrier.

## 6.1 External façade sound insulation requirements

A CadnaA noise map of the site has been constructed to determine the levels of airborne noise mitigation required for each applicable building facade. Plan and 3D views from the model can be found in the Appendix.

The minimum $R_w$ glazing/facade sound insulation requirements in Table S and T have been calculated using measured survey data and CadnaA noise mapping calculations.

Residential bedroom façade sound insulation values are dictated by $L_{Amax}$ external noise measurements, allowing for 10 incursions above 45dB$L_{Amax}$ per night time period.

Living room façade sound insulation values are dictated by $L_{Aeq,16hr}$ day-time external noise measurements.

The minimum $R_w$ glazing performances are given in the tables below.

**Table S: Residential Living room façade/glazing requirements to satisfy BS8233:2014 Internal Noise Limits**

| Location | Predicted external noise level, LAeq, dB (Day-time) | Target internal noise level LAeq, dB | Minimum Level Difference, D. dB | Recommended minimum glazing sound reduction, Rw dB |
|---|---|---|---|---|
| Tower North Façade Living Rooms (Facade A on plans) | 67 | 35 | 32 | 40 |
| Tower East Façade Living Rooms (Façade B on plans) | 63 | 35 | 28 | 36 |
| Tower West Façade Living Rooms (Façade C on Plans) | 61 | 35 | 26 | 34 |
| Terrace South Façade Living Rooms (Façade I on Plans) | 59 | 35 | 24 | 32 |
| Terrace North Façade Living Rooms (Facade J on Plans) | 55 | 35 | 20 | 28 |

**Table T: Residential Bedroom façade/glazing requirements to satisfy BS8233:2014 Internal Noise Limits**

| Location | Predicted external noise level, LAmax, dB (Night-time) | Target internal noise level LAmax, dB | Minimum Level Difference, D. dB | Recommended minimum glazing sound reduction, Rw dB |
|---|---|---|---|---|
| Tower East Façade Bedrooms (Façade B on Plans) | 81 | 45 | 36 | 44 |
| Tower West Façade Bedrooms (Façade C on Plans) | 81 | 45 | 36 | 44 |
| Tower South Façade Bedrooms (Façade D on Plans) | 67 | 45 | 22 | 30 |
| Terrace South Façade Bedrooms (Facade I on Plans) | 61 | 45 | 16 | 24 |
| Terrace North Façade Bedrooms (Facade J on Plans) | 73 | 45 | 28 | 36 |

**Note:** $R_w$ is the "overall weighted sound reduction index" tested in a laboratory.

**Table U: Commercial façade/glazing requirements to satisfy BCO Cat A Internal Noise Limits**

| Location | Predicted external noise level, LAeq, dB (Day-time) | Target internal noise level LAeq, dB | Minimum Level Difference, D, dB | Recommended minimum glazing sound reduction, Rw dB |
|---|---|---|---|---|
| Commercial North Facade (Façade E on Plans) | 54 | 40 | 14 | 22 |
| Commercial East Facade (Façade F on Plans) | 55 | 40 | 15 | 23 |
| Commercial South Facade (Façade G on Plans) | 59 | 40 | 19 | 27 |
| Commercial West Facade (Façade H on Plans) | 52 | 40 | 12 | 20 |

**Note:** $R_w$ is the "overall weighted sound reduction index" tested in a laboratory.

Based on the above calculations the typically internal noise levels in dwellings will meet those set out in Table F. These levels may not be met during atypical traffic flows or weather conditions and individual loud events (sirens, horns, trains, etc) will exceed these levels.

Ventilation noise will increase the overall ambient levels in the rooms should be appropriately designed so that the cumulative levels do not exceed the design ranges in Table F.

The calculations above assume that all glazing will be well sealed, the rooms have reverberation times and volumes typical for residential environments and that there are no other acoustic weaknesses in the façades e.g. façade vents.

Atypical rooms with large glazed areas and reverberation times in excess of 1 second may require further detailed calculation to ensure internal noise levels will be met.

Other façade elements should designed to be a minimum of Rw 5dB higher than the above glazing ratings.

Glazing suppliers should submit manufacturers test data sheet for the glazing (including frames) for approval before order to ensure they meet the correct criteria above.

Typical Glazing build ups required to satisfy the above requirements can be found in Appendix.

### 6.2 Façade ventilation

Where buildings have natural air ventilation via the external facade acoustically attenuated air paths should to be constructed so as not to degrade the acoustic performance of the building fabric.

Acoustic $D_{ne,w}$ ratings of trickle vents should match the specified sound reduction index $R_w$ of the windows to ensure the performance is maintained.

Openable passive acoustically attenuated ventilation can generally be designed to provide level differences (D) circa 20 dB to 25 dB.

Based on the predicted external noise levels all internal spaces require greater levels of sound insulation than can be achieve with openable passive ventilation.

All areas of the scheme are to be ventilated using mechanical ventilation and/or natural air exhaust chimney with acoustic attenuators providing sufficient noise reduction to ensure that sound insulation of the building envelope is maintained.

### 6.3 Plant Noise

As per the limits stipulated in section 2.1 Table E noise levels emanating from any proposed items of plant should be designed to be 5dBA below the lowest measured background noise level during the hours of operation at the nearest noise sensitive residential properties.

An assessment in accordance with the methodology of BS4142 should be carried out in the later design stages once all items of plant and their locations have been designed.

### 6.4 External Amenity Areas

The CadnaA model in Figure 1 shows the predicted noise propagation around the site based on the daytime noise level averages. As detailed in Section 2 noise levels in residential outdoor areas should not exceed 55 dB$L_{Aeq,\ 16hr.}$

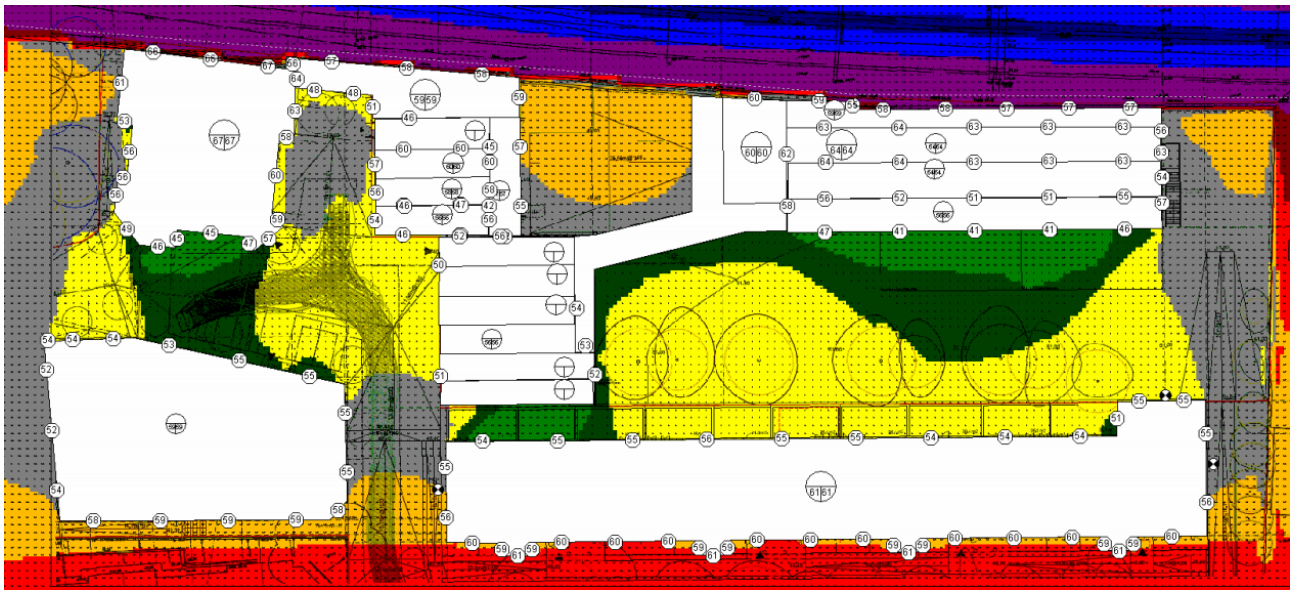
The zones in Yellow and Green show the areas of the site where noise levels are below 50 dB $L_{Aeq,\ 16hr.}$

The zone in Grey show the areas of the site where noise levels are between 50 and 55 dB $L_{Aeq,\ 16hr.}$

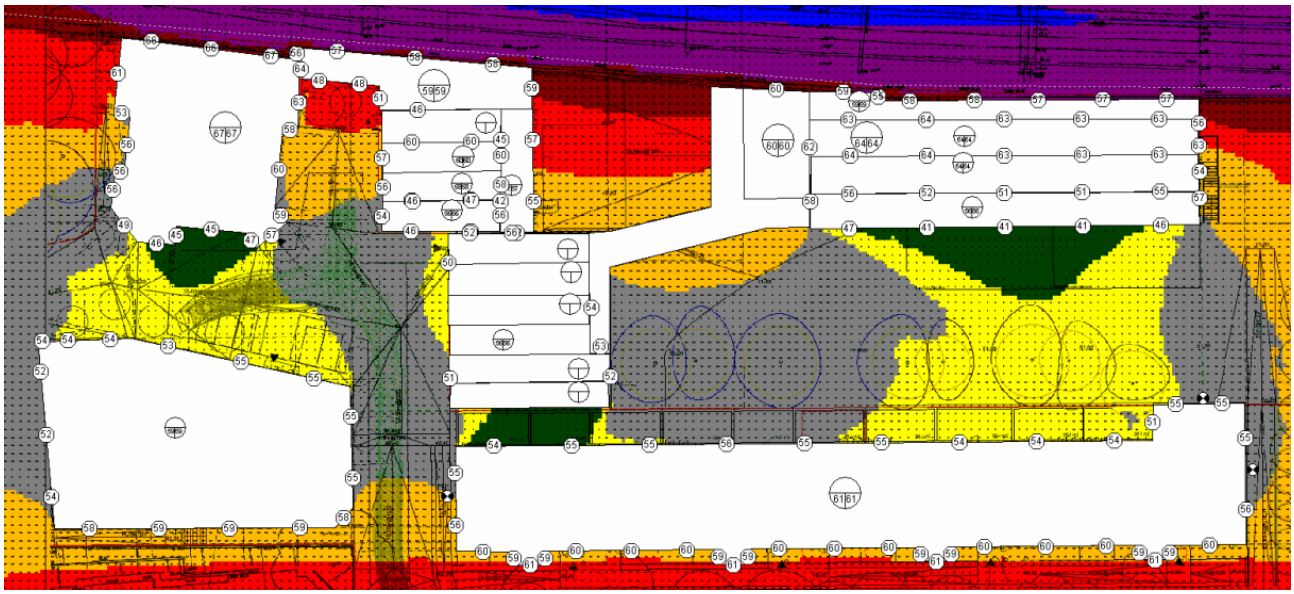
The zone in Orange and red show areas of the site where noise levels are above 55 $L_{Aeq,16hr.}$

**Figure 1: CadnaA External Noise Mapping Predictions based on $L_{Aeq,16hr}$ survey results.**

**Noise mapping prediction at a height above ground of 1.8m**



**Noise mapping prediction at a height above ground of 5m**



It has been recommended that the north, east and western facades of the tower block have winter gardens or balcony noise barriers to the railway. Refer to architectural plans and sections for further details.

## 7.0 VIBRATION AND STRUCTURE BORNE NOISE

The proposed site lies adjacent to a railway line to the North and as a result the proposed development may be subject to perceptible vibration and reradiated noise.

As per the neighbouring sites on Iverson Road GSAD recommend that if planning permission is granted a vibration assessment should be undertaken on the site.

The results of the surveys should be compared with BS6472:1992 and LB Camden criteria to determine whether perceptible vibration levels, vibration dose levels (VDV) and levels of re radiated noise are acceptable in all areas of the proposed development.

Vibration surveys should be undertaken at a minimum of two locations that represent the closest positions of any residential block to the railway line.

Assessments should take into account the structural changes in the proposed buildings to determine how the proposed construction of the new development is likely to impact on the measured pre-construction vibration levels.

Where vibration noise levels exceed the required criteria as full scheme of vibration mitigation measures should be submitted to Camden Council for approval prior to the commencement of works. The mitigation measures should ensure that the frequency distribution of the vibration energy is fully understood to ensure that the appropriate mitigation is implemented.

## 8.0 CONSTRUCTION NOISE AND VIBRATION

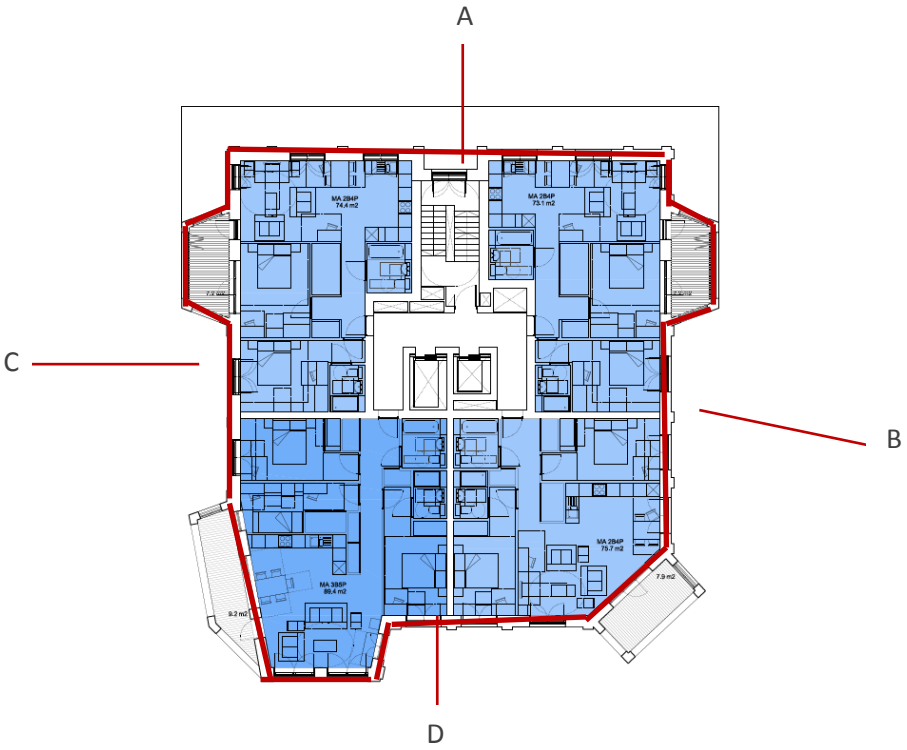
Construction noise should be controlled and managed according to the principles of British Standard BS 5228-1:2009. Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration.

The main Contractor will be required to submit a method statement showing how noise and vibration will be controlled throughout the contract to meet limits at residences agreed with the Camden Council.

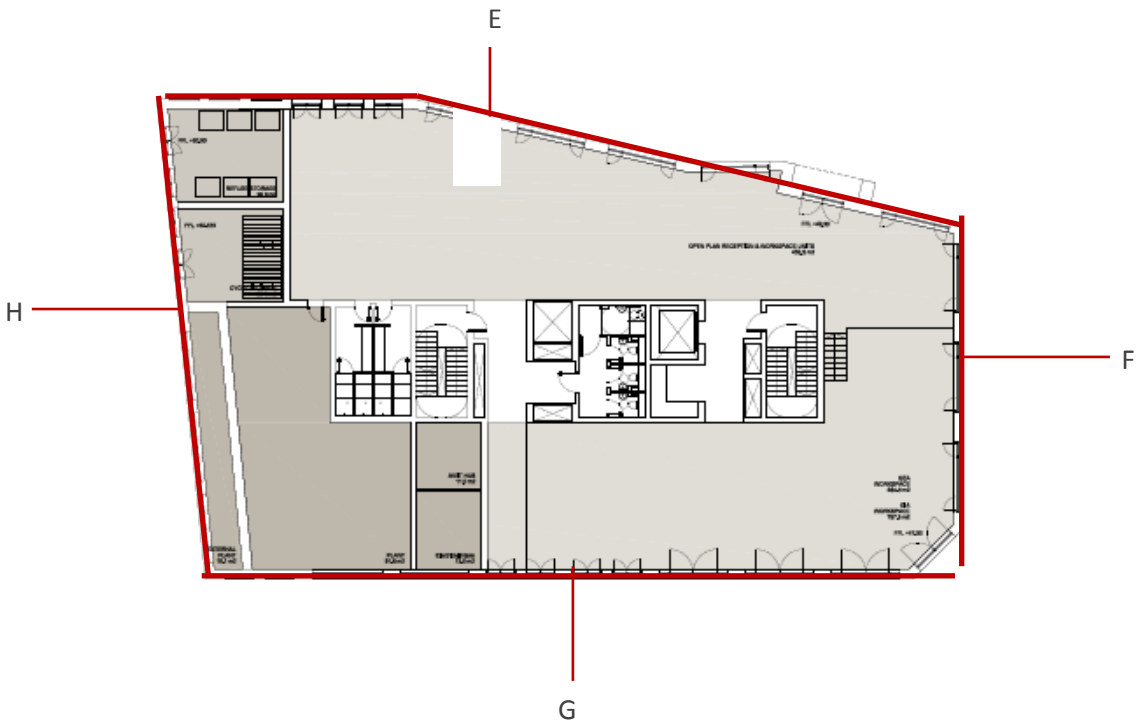
Construction methods will be chosen to minimise noise in residential buildings. Protocols will be arranged for warning the Contractor in the short term.

# APPENDIX A: PROPOSED PLANS AND GLAZING LOCATIONS

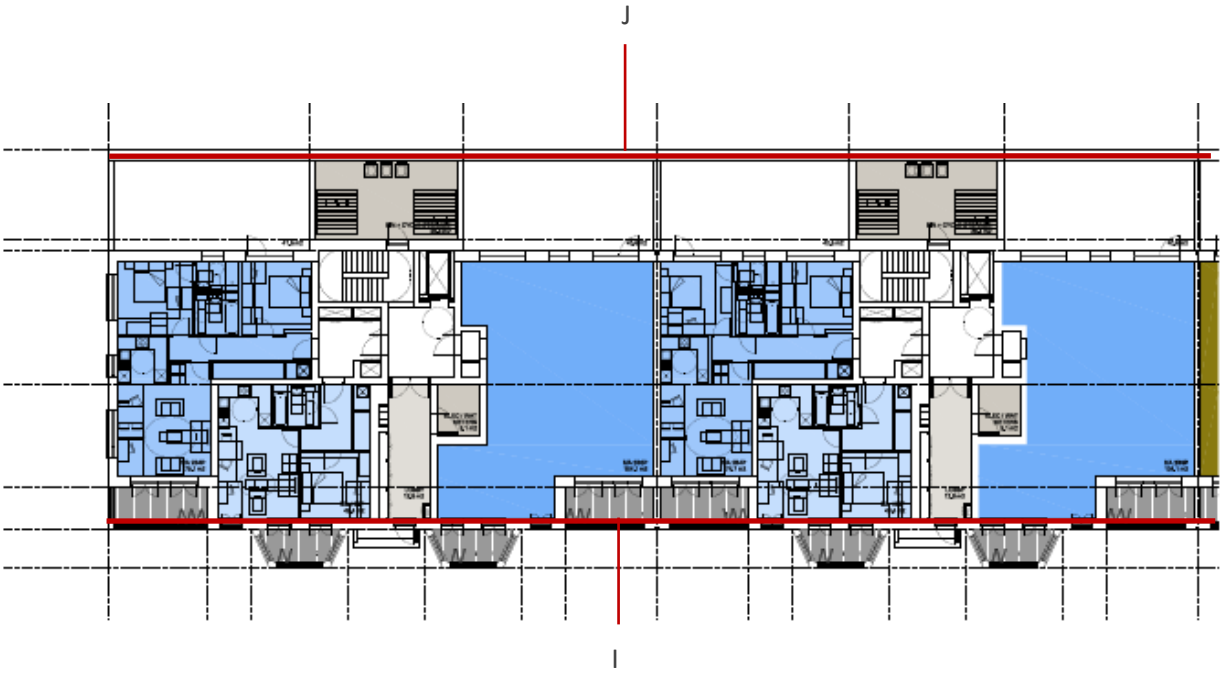
## NORTHERN RESIDENTIAL TOWER BLOCK




## COMMERCIAL DEVELOPMENT



**RESIDENTIAL SOUTH TERRACE**




## APPENDIX B: NOISE SURVEY POSITIONS

**Existing site**

Position A - Rear of Commercial Unit 12 adjacent to railway boundary


Position B Rear of Commercial Unit 22

# APPENDIX C: MEASUREMENT EQUIPMENT AND PROCEDURE

**Airborne Noise**

Background noise levels have been measured over a minimum period of 24 hours at the front and rear of the proposed site, the measurement positions are shown in Appendix A.

The levels were recorded as A-weighted and octave band $L_{eq}$, $L_{max}$ and $L_{90}$ using the following equipment.

2 x Norsonic 118 Real Time Analyser
Norsonic 1251 Calibrator
GRAS Environmental Microphone

The equipment was calibrated before and after the survey and no drift from calibration was found.

The weather conditions throughout the survey were acceptable throughout.

# APPENDIX D: ACOUSTIC RATINGS OF TYPICAL GLAZING

The glazed areas set out in this report should achieve the stated airborne sound insulation standards.
Laboratory data for each glazing type should be submitted by the Supplier, measured according to BS EN 140 – 3:1995, from a UKAS certified laboratory.
Glazing elements should be set in neoprene gaskets with no contact with frames.
All glazing/frames should be sealed airtight to building structure with silicone mastic.
All framing and glazing details to be submitted to the acoustic consultant for approval prior to installation.

**TYPICAL ACOUSTIC GLAZING RATINGS**

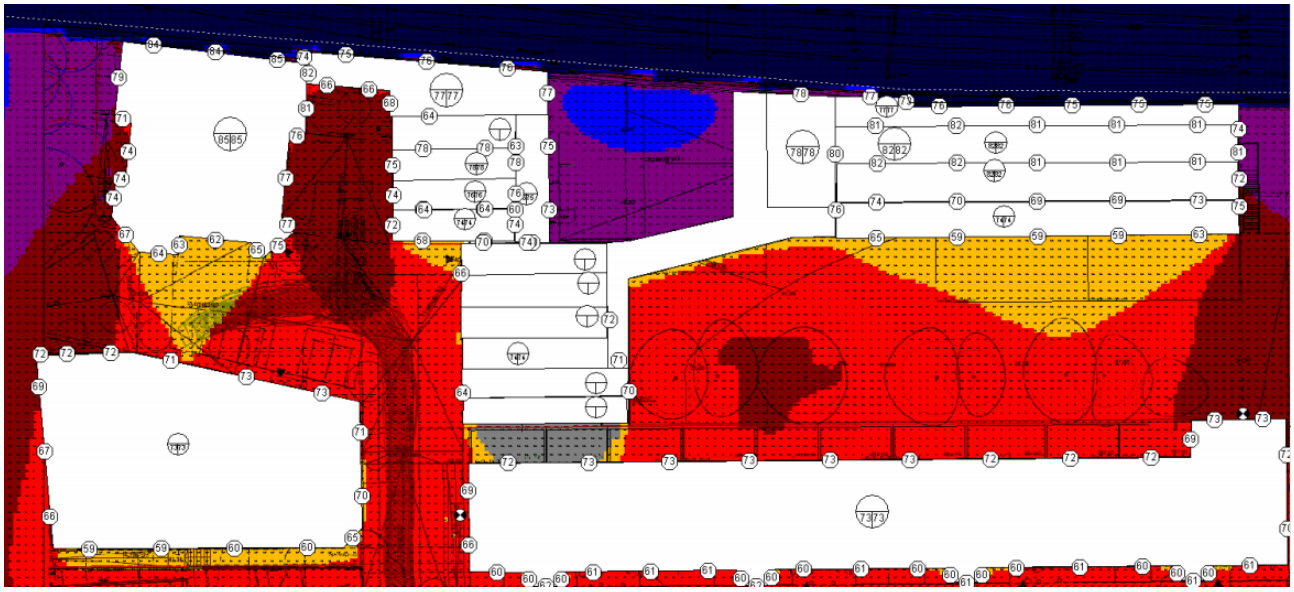
The table below gives the octaves band acoustic performance for all types of glazing required to achieve the recommended acoustic specifications;

| Acoustic Rating | 125 | 250 | 500 | 1k | 2k | 4k | Typical Build-up |
|---|---|---|---|---|---|---|---|
| Rw29 | 21 | 17 | 25 | 35 | 37 | 31 | **Double** - 4mm/20mm/4mm |
| Rw32 | 21 | 20 | 26 | 38 | 37 | 39 | **Double** - 6mm/20mm/6mm |
| Rw35 | 24 | 24 | 32 | 37 | 37 | 44 | **Double** - 10mm/20mm/6mm |
| Rw38 | 23 | 24 | 34 | 42 | 43 | 52 | **Double** - 6mm/20mm void/6.8mm lam |
| Rw41 | 24 | 26 | 40 | 48 | 46 | 54 | **Double** - 6mm/20mm void/8.8mm lam |
| Rw42 | 23 | 28 | 41 | 47 | 45 | 55 | **Double** - 6mm/20mm void/10.8mm lam |
| Rw45 | 28 | 34 | 44 | 52 | 47 | 55 | **Double** - 6.8mm lam/20mm void/10.8mm lam |
| Rw47 | 26 | 36 | 46 | 50 | 52 | 63 | **Double** - 8.8mm lam/20mm void/12.8mm lam<br>or<br>**Triple Glazing**<br>Rw32 Outer Pane (6mm/20mm/6mm double)<br>150mm void between panes<br>Rw 37dB Inner Pane (8.2mm lam single) |
| Rw49 | 36 | 43 | 48 | 52 | 54 | 58 | **Triple Glazing**<br>Rw32 Outer Pane (6mm/20mm/6mm double)<br>150mm void between panes<br>Rw 37dB Inner Pane (8.2mm laminated glass) |

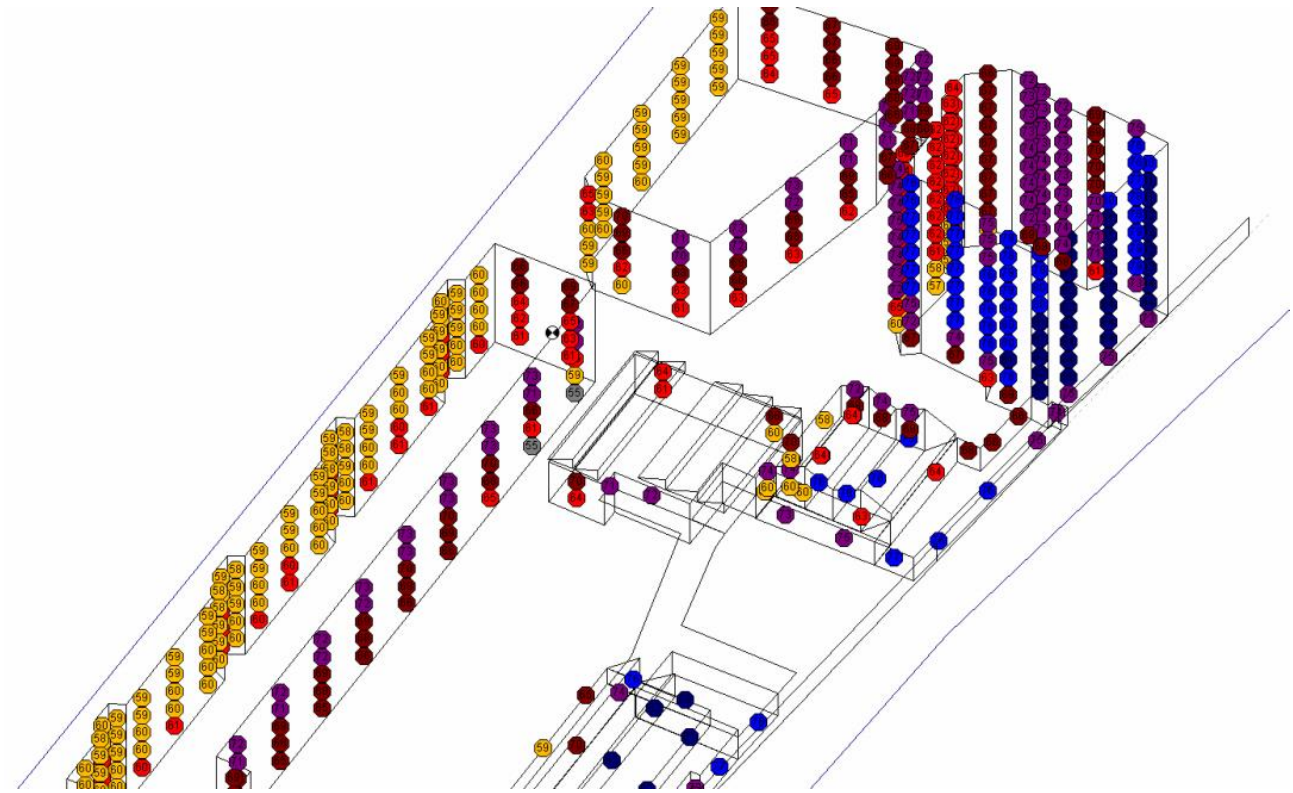
Notes:
1/ All double glazed values shown in the table above with the exception of Rw45dB glazing are by Pilkington Optiphon.
2/ Triple Glazing has been predicted using INSUL.
3/ Lam = Laminated glass.
4/ Laminated double glazing is generally Argon filled.
5/ Alternative equivalent manufacturers can be used providing manufacturer's test data for selected windows and framing systems are approved by the acoustic consultant to ensure compliance with the performance specification prior to installation.

## APPENDIX E: CADNA A NOISE MAPPING

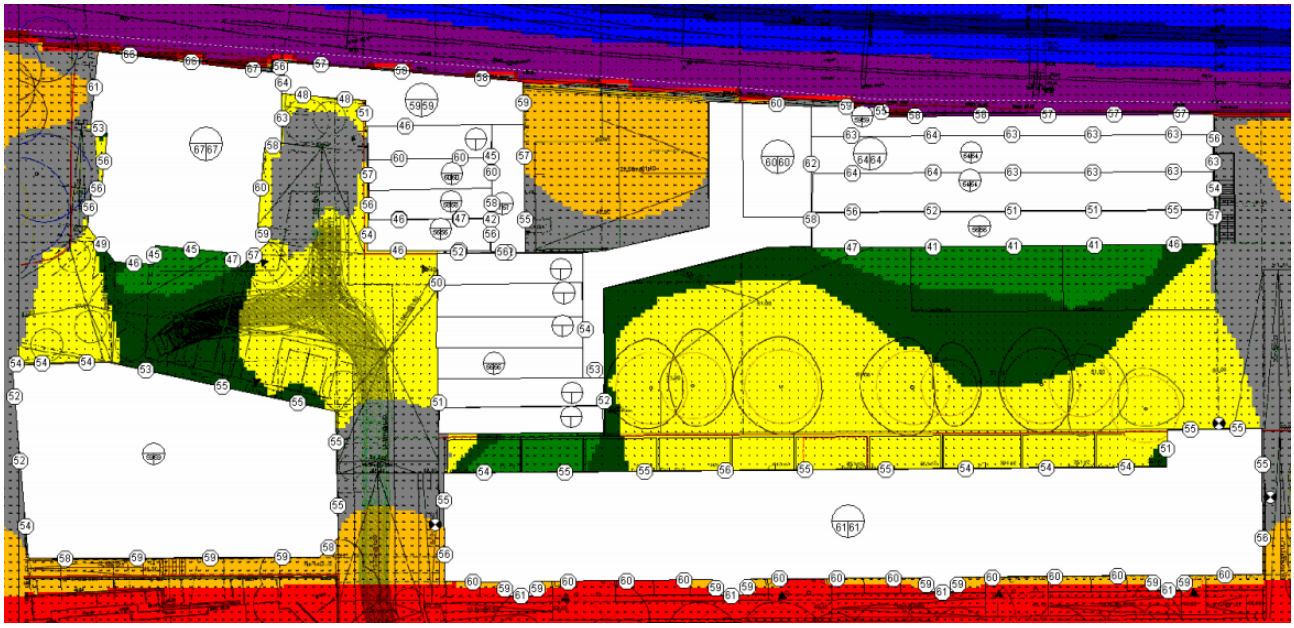
Plan view showing predicted distribution of noise levels across the site based on the 11th worst case Night-time $L_{max}$ noise event



3D view showing predicted distribution of noise levels across the site based on the 11th worst case Night-time $L_{max}$ noise event



Plan view showing predicted distribution of noise levels across the site based on day-time average noise levels, $L_{eq,16hr}$



# APPENDIX F: SURVEY RESULTS

**Position A: Railway**

| Date | Time | $L_{Aeq}$ | $L_{Amax}$ | $L_{Aeq}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| | | | | | | | | | | | |
| 14/10/2014 | 16:15:00 | 72.1 | 96.0 | 57.0 | 55.1 | 57.2 | 60.0 | 61.1 | 65.0 | 65.4 | 68.1 |
| 14/10/2014 | 16:30:00 | 66.7 | 86.3 | 54.1 | 54.0 | 54.6 | 55.8 | 57.8 | 58.7 | 58.5 | 58.8 |
| 14/10/2014 | 16:45:00 | 63.5 | 87.5 | 50.8 | 50.3 | 51.9 | 53.0 | 55.6 | 61.2 | 60.7 | 62.6 |
| 14/10/2014 | 17:00:00 | 68.9 | 87.7 | 56.7 | 56.1 | 54.7 | 60.3 | 67.9 | 61.5 | 62.8 | 59.5 |
| 14/10/2014 | 17:15:00 | 69.7 | 91.9 | 56.7 | 54.0 | 57.8 | 57.8 | 60.2 | 63.3 | 62.7 | 65.6 |
| 14/10/2014 | 17:30:00 | 69.3 | 94.2 | 54.1 | 54.7 | 55.1 | 57.0 | 59.7 | 67.3 | 66.1 | 59.6 |
| 14/10/2014 | 17:45:00 | 69.5 | 90.3 | 53.9 | 54.2 | 55.4 | 57.0 | 59.5 | 65.4 | 63.6 | 67.4 |
| 14/10/2014 | 18:00:00 | 68.3 | 87.2 | 55.2 | 56.1 | 57.0 | 57.1 | 58.7 | 61.8 | 59.4 | 57.9 |
| 14/10/2014 | 18:14:00 | 70.1 | 95.7 | 54.0 | 53.7 | 53.7 | 55.8 | 59.4 | 63.4 | 59.6 | 61.5 |
| 14/10/2014 | 18:30:00 | 70.0 | 94.0 | 53.8 | 52.8 | 55.1 | 56.1 | 58.7 | 61.7 | 62.3 | 66.8 |
| 14/10/2014 | 18:45:00 | 68.9 | 88.6 | 57.6 | 60.4 | 59.2 | 62.4 | 63.8 | 64.6 | 67.0 | 68.6 |
| 14/10/2014 | 19:00:00 | 68.5 | 89.6 | 53.8 | 54.5 | 53.8 | 55.0 | 57.0 | 59.9 | 64.1 | 65.2 |
| 14/10/2014 | 19:15:00 | 64.7 | 91.5 | 49.8 | 50.8 | 50.7 | 50.2 | 53.0 | 57.2 | 56.0 | 57.3 |
| 14/10/2014 | 19:30:00 | 67.1 | 85.2 | 51.7 | 54.5 | 52.8 | 52.1 | 54.9 | 57.9 | 68.5 | 57.2 |
| 14/10/2014 | 19:45:00 | 62.7 | 82.8 | 48.9 | 49.2 | 51.0 | 49.2 | 51.7 | 54.1 | 54.1 | 55.0 |
| 14/10/2014 | 20:00:00 | 65.7 | 90.1 | 51.1 | 50.6 | 49.8 | 49.9 | 53.1 | 55.2 | 54.1 | 54.8 |
| 14/10/2014 | 20:15:00 | 63.3 | 86.0 | 50.1 | 50.0 | 50.0 | 49.9 | 52.9 | 55.0 | 54.6 | 54.5 |
| 14/10/2014 | 20:30:00 | 64.9 | 86.5 | 50.6 | 50.7 | 51.5 | 50.9 | 54.5 | 59.3 | 60.1 | 61.7 |
| 14/10/2014 | 20:45:00 | 61.8 | 80.8 | 51.1 | 52.8 | 52.1 | 56.4 | 56.5 | 63.6 | 62.5 | 62.2 |
| 14/10/2014 | 21:00:00 | 64.5 | 84.4 | 51.2 | 53.1 | 51.1 | 53.9 | 59.0 | 68.5 | 63.8 | 60.0 |
| 14/10/2014 | 21:15:00 | 64.0 | 85.0 | 52.5 | 51.8 | 53.2 | 51.9 | 55.0 | 61.6 | 60.1 | 61.7 |
| 14/10/2014 | 21:30:00 | 70.8 | 95.0 | 58.5 | 56.6 | 55.5 | 60.2 | 60.1 | 65.2 | 64.3 | 66.0 |
| 14/10/2014 | 21:45:00 | 65.0 | 84.7 | 53.5 | 55.0 | 63.1 | 53.3 | 57.4 | 61.1 | 59.8 | 62.6 |
| 14/10/2014 | 22:00:00 | 64.9 | 95.8 | 52.7 | 52.5 | 62.0 | 55.0 | 68.0 | 63.0 | 63.7 | 56.3 |
| 14/10/2014 | 22:15:00 | 67.0 | 82.1 | 54.4 | 57.9 | 58.4 | 61.3 | 63.8 | 67.4 | 64.5 | 67.3 |
| 14/10/2014 | 22:30:00 | 64.4 | 89.9 | 51.6 | 49.5 | 54.7 | 51.7 | 53.2 | 56.1 | 55.3 | 63.2 |
| 14/10/2014 | 22:45:00 | 69.3 | 96.3 | 55.0 | 57.0 | 54.7 | 61.1 | 60.0 | 64.8 | 64.1 | 65.3 |
| 14/10/2014 | 23:00:00 | 62.1 | 90.2 | 46.0 | 47.5 | 46.3 | 46.1 | 46.8 | 49.1 | 50.6 | 48.4 |
| 14/10/2014 | 23:14:00 | 62.6 | 81.5 | 49.7 | 49.6 | 52.0 | 50.4 | 52.8 | 55.2 | 54.3 | 53.0 |
| 14/10/2014 | 23:30:00 | 61.6 | 81.2 | 51.4 | 49.8 | 51.0 | 53.2 | 56.8 | 62.1 | 60.3 | 62.8 |
| 14/10/2014 | 23:45:00 | 56.4 | 81.3 | 47.2 | 46.0 | 44.6 | 44.7 | 45.2 | 47.2 | 47.9 | 47.0 |
| 15/10/2014 | 00:00:00 | 54.8 | 79.3 | 45.9 | 46.0 | 46.5 | 43.8 | 48.9 | 46.9 | 45.6 | 44.6 |
| 15/10/2014 | 00:15:00 | 59.9 | 79.3 | 51.7 | 48.5 | 52.4 | 52.2 | 56.4 | 59.8 | 59.7 | 64.1 |
| 15/10/2014 | 00:30:00 | 48.3 | 70.6 | 45.0 | 45.4 | 43.5 | 40.9 | 41.3 | 42.3 | 41.5 | 41.8 |
| 15/10/2014 | 00:45:00 | 55.6 | 80.9 | 45.6 | 43.2 | 42.7 | 40.8 | 42.6 | 45.9 | 44.7 | 41.5 |
| 15/10/2014 | 01:00:00 | 35.4 | 44.6 | 39.2 | 40.8 | 41.3 | 38.0 | 38.0 | 39.3 | 38.5 | 32.7 |
| 15/10/2014 | 01:15:00 | 51.1 | 73.0 | 44.0 | 43.9 | 42.9 | 40.3 | 42.5 | 46.2 | 46.9 | 46.8 |
| 15/10/2014 | 01:30:00 | 52.8 | 73.3 | 42.9 | 42.7 | 43.7 | 42.1 | 42.6 | 45.8 | 45.1 | 45.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15/10/2014 | 01:45:00 | 35.2 | 43.9 | 41.8 | 42.2 | 42.0 | 38.2 | 38.3 | 38.6 | 36.6 | 32.0 |
| 15/10/2014 | 02:00:00 | 34.9 | 49.6 | 38.6 | 41.4 | 42.7 | 39.1 | 37.3 | 38.6 | 39.6 | 36.3 |
| 15/10/2014 | 02:15:00 | 54.6 | 79.7 | 42.1 | 42.1 | 42.6 | 41.2 | 43.2 | 48.3 | 49.1 | 44.5 |
| 15/10/2014 | 02:30:00 | 34.9 | 43.2 | 40.4 | 42.2 | 42.7 | 39.1 | 38.6 | 42.4 | 44.0 | 38.9 |
| 15/10/2014 | 02:45:00 | 47.7 | 67.8 | 42.8 | 44.5 | 43.3 | 42.6 | 41.5 | 44.5 | 47.5 | 44.0 |
| 15/10/2014 | 03:00:00 | 58.3 | 84.0 | 43.3 | 44.7 | 45.4 | 51.9 | 52.0 | 52.9 | 56.2 | 64.6 |
| 15/10/2014 | 03:15:00 | 62.0 | 88.8 | 52.4 | 49.7 | 49.4 | 51.1 | 55.3 | 59.1 | 58.1 | 64.7 |
| 15/10/2014 | 03:30:00 | 60.0 | 82.4 | 44.2 | 43.4 | 45.0 | 43.6 | 44.0 | 46.3 | 47.3 | 47.5 |
| 15/10/2014 | 03:45:00 | 29.8 | 42.1 | 38.8 | 40.3 | 40.8 | 41.8 | 38.6 | 38.6 | 42.1 | 37.5 |
| 15/10/2014 | 04:00:00 | 54.3 | 76.1 | 42.6 | 43.7 | 43.1 | 42.1 | 43.8 | 43.7 | 46.5 | 46.1 |
| 15/10/2014 | 04:14:00 | 55.4 | 78.9 | 42.0 | 43.2 | 44.2 | 41.9 | 43.0 | 45.7 | 45.9 | 43.8 |
| 15/10/2014 | 04:30:00 | 48.8 | 68.5 | 41.6 | 42.4 | 43.1 | 41.6 | 43.1 | 43.2 | 49.7 | 47.6 |
| 15/10/2014 | 04:44:00 | 56.6 | 77.8 | 45.4 | 46.3 | 45.7 | 46.6 | 46.6 | 47.2 | 52.4 | 50.1 |
| 15/10/2014 | 05:00:00 | 48.1 | 74.1 | 48.4 | 46.5 | 45.6 | 43.2 | 40.7 | 43.3 | 51.1 | 44.8 |
| 15/10/2014 | 05:15:00 | 59.5 | 80.4 | 52.3 | 53.2 | 55.7 | 52.6 | 51.5 | 58.2 | 55.8 | 51.2 |
| 15/10/2014 | 05:30:00 | 56.5 | 83.2 | 49.7 | 50.6 | 49.8 | 52.4 | 57.4 | 58.3 | 59.6 | 59.8 |
| 15/10/2014 | 05:45:00 | 65.3 | 84.8 | 53.6 | 52.5 | 52.8 | 52.8 | 57.4 | 60.0 | 66.1 | 68.5 |
| 15/10/2014 | 05:59:00 | 62.9 | 84.4 | 50.9 | 50.1 | 52.0 | 51.8 | 55.1 | 61.8 | 62.1 | 64.3 |
| 15/10/2014 | 06:15:00 | 56.3 | 76.2 | 47.0 | 48.1 | 45.8 | 45.4 | 46.1 | 47.4 | 52.3 | 50.5 |
| 15/10/2014 | 06:30:00 | 67.7 | 93.8 | 52.7 | 52.1 | 51.5 | 52.1 | 54.7 | 55.5 | 54.6 | 54.0 |
| 15/10/2014 | 06:45:00 | 63.9 | 85.4 | 50.8 | 51.5 | 51.7 | 48.9 | 53.8 | 54.0 | 53.3 | 53.9 |
| 15/10/2014 | 07:00:00 | 62.8 | 81.0 | 52.3 | 52.7 | 54.0 | 55.4 | 57.7 | 63.1 | 61.8 | 64.8 |
| 15/10/2014 | 07:14:00 | 70.6 | 98.6 | 53.8 | 53.1 | 53.7 | 58.8 | 56.7 | 58.9 | 58.0 | 60.0 |
| 15/10/2014 | 07:30:00 | 67.1 | 84.4 | 55.0 | 57.2 | 56.7 | 59.0 | 59.3 | 65.2 | 63.4 | 65.7 |
| 15/10/2014 | 07:45:00 | 65.5 | 90.7 | 52.5 | 53.3 | 52.7 | 52.9 | 54.2 | 55.6 | 60.6 | 56.1 |
| 15/10/2014 | 08:00:00 | 67.3 | 86.1 | 53.2 | 54.9 | 54.1 | 57.9 | 58.2 | 59.4 | 66.5 | 57.8 |
| 15/10/2014 | 08:15:00 | 67.8 | 88.1 | 56.2 | 55.6 | 57.8 | 56.9 | 59.1 | 63.6 | 62.0 | 66.8 |
| 15/10/2014 | 08:30:00 | 69.1 | 89.3 | 54.9 | 54.7 | 54.4 | 53.6 | 57.7 | 60.8 | 57.9 | 57.3 |
| 15/10/2014 | 08:45:00 | 68.4 | 84.3 | 55.0 | 60.2 | 57.6 | 58.0 | 60.2 | 65.1 | 69.5 | 60.2 |
| 15/10/2014 | 09:00:00 | 68.6 | 86.8 | 54.6 | 55.8 | 55.5 | 56.7 | 61.2 | 68.7 | 65.0 | 64.9 |
| 15/10/2014 | 09:15:00 | 68.8 | 93.0 | 54.6 | 55.0 | 55.9 | 58.2 | 62.1 | 68.8 | 66.5 | 65.6 |
| 15/10/2014 | 09:29:00 | 69.1 | 91.8 | 54.5 | 55.5 | 54.8 | 56.2 | 59.8 | 62.0 | 60.8 | 62.1 |
| 15/10/2014 | 09:45:00 | 65.5 | 86.0 | 54.2 | 53.3 | 54.8 | 55.9 | 59.2 | 64.4 | 61.9 | 64.1 |
| 15/10/2014 | 10:00:00 | 64.8 | 86.6 | 53.0 | 52.6 | 53.1 | 54.1 | 57.4 | 57.1 | 55.3 | 56.0 |
| 15/10/2014 | 10:15:00 | 70.6 | 95.7 | 56.7 | 56.9 | 55.7 | 59.3 | 59.7 | 65.5 | 62.6 | 63.9 |
| 15/10/2014 | 10:30:00 | 67.6 | 92.0 | 56.2 | 55.6 | 54.6 | 55.0 | 57.5 | 57.2 | 56.3 | 57.3 |
| 15/10/2014 | 10:45:00 | 63.2 | 82.7 | 55.9 | 54.7 | 54.5 | 53.7 | 55.3 | 57.9 | 57.3 | 59.1 |
| 15/10/2014 | 11:00:00 | 72.2 | 101.7 | 61.3 | 60.2 | 61.0 | 61.1 | 65.3 | 65.8 | 64.7 | 66.7 |
| 15/10/2014 | 11:15:00 | 68.0 | 90.1 | 57.7 | 57.9 | 59.0 | 58.8 | 61.6 | 68.4 | 68.1 | 64.7 |
| 15/10/2014 | 11:30:00 | 67.3 | 86.0 | 55.4 | 55.1 | 59.4 | 57.7 | 57.5 | 58.6 | 58.0 | 58.4 |
| 15/10/2014 | 11:45:00 | 63.5 | 80.0 | 57.0 | 55.7 | 56.2 | 58.9 | 60.2 | 62.1 | 57.6 | 63.7 |
| 15/10/2014 | 12:00:00 | 69.0 | 92.8 | 56.0 | 58.4 | 57.4 | 59.9 | 60.1 | 63.1 | 61.9 | 57.3 |
| 15/10/2014 | 12:15:00 | 71.0 | 98.9 | 56.6 | 55.9 | 56.8 | 60.4 | 63.6 | 64.2 | 61.1 | 63.7 |
| 15/10/2014 | 12:29:00 | 64.5 | 81.3 | 54.6 | 55.0 | 55.3 | 58.0 | 60.1 | 59.7 | 59.3 | 61.0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 15/10/2014 | 12:45:00 | 62.8 | 80.6 | 56.3 | 55.6 | 56.2 | 58.8 | 62.0 | 62.7 | 62.2 | 64.3 |
| 15/10/2014 | 13:00:00 | 67.2 | 85.4 | 55.8 | 56.9 | 57.7 | 62.4 | 62.9 | 68.1 | 61.2 | 57.9 |
| 15/10/2014 | 13:15:00 | 67.6 | 88.3 | 56.3 | 55.0 | 56.2 | 60.1 | 60.1 | 65.7 | 63.1 | 65.8 |
| 15/10/2014 | 13:30:00 | 67.4 | 89.1 | 57.3 | 57.6 | 57.1 | 58.4 | 59.3 | 60.5 | 59.5 | 61.6 |
| 15/10/2014 | 13:45:00 | 64.8 | 87.7 | 54.3 | 53.6 | 53.4 | 53.4 | 57.1 | 60.5 | 60.2 | 62.4 |
| 15/10/2014 | 14:00:00 | 67.7 | 88.5 | 56.6 | 56.7 | 56.7 | 59.1 | 60.0 | 63.8 | 62.8 | 64.8 |
| 15/10/2014 | 14:15:00 | 67.6 | 92.4 | 55.7 | 55.1 | 54.6 | 56.2 | 58.3 | 63.4 | 64.0 | 66.0 |
| 15/10/2014 | 14:29:00 | 70.9 | 89.8 | 58.3 | 58.9 | 59.8 | 64.7 | 66.1 | 64.8 | 61.9 | 63.2 |
| 15/10/2014 | 14:45:00 | 62.3 | 78.2 | 54.0 | 54.5 | 53.8 | 53.6 | 56.5 | 59.6 | 61.7 | 64.2 |
| 15/10/2014 | 15:00:00 | 67.2 | 84.1 | 58.6 | 58.6 | 57.7 | 60.7 | 64.0 | 66.5 | 63.5 | 60.6 |
| 15/10/2014 | 15:15:00 | 69.2 | 95.0 | 57.3 | 56.4 | 56.5 | 56.5 | 59.9 | 63.1 | 63.8 | 65.5 |
| 15/10/2014 | 15:29:00 | 65.0 | 82.6 | 56.7 | 56.4 | 55.2 | 54.6 | 57.7 | 59.1 | 59.7 | 61.0 |
| 15/10/2014 | 15:45:00 | 63.0 | 83.3 | 56.7 | 56.0 | 55.7 | 56.8 | 57.7 | 62.2 | 62.9 | 65.1 |
| 15/10/2014 | 16:00:00 | 67.0 | 86.0 | 57.0 | 57.4 | 57.6 | 61.8 | 59.4 | 61.7 | 59.0 | 58.7 |
| 15/10/2014 | 16:15:00 | 69.8 | 94.2 | 56.2 | 55.8 | 56.0 | 58.2 | 58.8 | 60.4 | 62.4 | 65.9 |
| 15/10/2014 | 16:30:00 | 66.8 | 84.9 | 55.5 | 54.8 | 54.0 | 53.8 | 60.7 | 58.6 | 58.4 | 58.7 |
| 15/10/2014 | 16:45:00 | 65.8 | 92.7 | 56.0 | 55.6 | 55.7 | 55.3 | 56.4 | 62.2 | 61.2 | 62.9 |
| 15/10/2014 | 17:00:00 | 69.3 | 93.0 | 56.1 | 59.5 | 57.8 | 58.7 | 59.8 | 63.6 | 59.1 | 58.0 |
| 15/10/2014 | 17:15:00 | 70.6 | 92.7 | 57.8 | 57.5 | 59.4 | 58.9 | 61.2 | 62.7 | 64.9 | 66.2 |
| 15/10/2014 | 17:30:00 | 69.3 | 89.4 | 56.7 | 55.5 | 56.8 | 57.9 | 60.9 | 62.1 | 59.0 | 61.1 |
| 15/10/2014 | 17:45:00 | 69.0 | 92.2 | 54.8 | 58.2 | 58.5 | 58.8 | 59.2 | 62.5 | 66.6 | 66.2 |
| 15/10/2014 | 18:00:00 | 69.2 | 89.1 | 57.2 | 56.3 | 56.6 | 61.1 | 60.2 | 65.3 | 63.2 | 58.5 |
| 15/10/2014 | 18:15:00 | 69.4 | 90.8 | 56.6 | 56.1 | 57.0 | 57.9 | 63.0 | 62.1 | 60.2 | 64.3 |
| 15/10/2014 | 18:30:00 | 70.2 | 91.7 | 57.1 | 55.8 | 58.3 | 56.6 | 59.8 | 61.6 | 64.5 | 67.5 |
| 15/10/2014 | 18:44:00 | 67.7 | 93.8 | 52.9 | 52.7 | 52.4 | 53.2 | 56.0 | 57.7 | 55.9 | 58.0 |
| 15/10/2014 | 19:00:00 | 69.8 | 92.5 | 56.5 | 54.6 | 54.6 | 59.4 | 58.7 | 63.1 | 62.7 | 63.9 |
| 15/10/2014 | 19:15:00 | 65.4 | 88.4 | 55.9 | 54.9 | 54.5 | 54.5 | 56.5 | 58.0 | 57.5 | 59.9 |
| 15/10/2014 | 19:30:00 | 69.8 | 94.6 | 54.8 | 53.2 | 53.3 | 54.3 | 58.3 | 62.9 | 58.7 | 64.0 |
| 15/10/2014 | 19:45:00 | 66.0 | 85.1 | 54.0 | 52.8 | 53.0 | 53.0 | 56.0 | 60.3 | 59.4 | 61.9 |
| 15/10/2014 | 20:00:00 | 70.2 | 94.8 | 56.5 | 57.0 | 55.9 | 57.8 | 59.1 | 62.3 | 59.7 | 64.3 |
| 15/10/2014 | 20:15:00 | 66.9 | 86.5 | 54.4 | 53.4 | 53.5 | 52.6 | 56.9 | 59.2 | 59.1 | 61.1 |
| 15/10/2014 | 20:30:00 | 66.6 | 87.4 | 53.8 | 52.4 | 51.7 | 51.8 | 56.3 | 57.6 | 57.2 | 57.0 |
| 15/10/2014 | 20:45:00 | 63.9 | 83.8 | 52.8 | 52.3 | 52.7 | 51.3 | 54.8 | 62.9 | 60.5 | 65.0 |
| 15/10/2014 | 21:00:00 | 71.2 | 95.8 | 55.8 | 55.9 | 57.2 | 56.3 | 58.2 | 61.2 | 58.9 | 57.5 |
| 15/10/2014 | 21:15:00 | 61.3 | 80.5 | 53.9 | 52.6 | 53.3 | 52.1 | 55.5 | 59.8 | 58.6 | 62.6 |
| 15/10/2014 | 21:29:00 | 64.9 | 85.5 | 54.0 | 52.9 | 51.9 | 52.2 | 56.7 | 56.8 | 54.9 | 55.9 |
| 15/10/2014 | 21:45:00 | 63.4 | 85.5 | 55.9 | 57.9 | 58.0 | 53.8 | 55.7 | 62.9 | 60.2 | 62.4 |
| 15/10/2014 | 22:00:00 | 67.9 | 95.1 | 54.2 | 52.8 | 58.3 | 52.9 | 57.7 | 57.8 | 54.9 | 62.0 |
| 15/10/2014 | 22:15:00 | 61.2 | 82.0 | 53.5 | 53.0 | 54.2 | 59.9 | 55.0 | 60.3 | 57.2 | 53.1 |
| 15/10/2014 | 22:30:00 | 67.0 | 94.2 | 57.7 | 58.2 | 58.9 | 57.0 | 57.5 | 60.0 | 61.3 | 62.0 |
| 15/10/2014 | 22:45:00 | 62.1 | 84.6 | 54.8 | 54.1 | 53.8 | 52.8 | 56.0 | 63.4 | 60.4 | 63.6 |
| 15/10/2014 | 23:00:00 | 60.6 | 83.8 | 50.1 | 49.5 | 49.5 | 48.6 | 48.7 | 50.9 | 50.0 | 49.5 |
| 15/10/2014 | 23:15:00 | 66.0 | 86.0 | 54.8 | 53.2 | 51.7 | 49.9 | 53.6 | 56.0 | 54.6 | 55.8 |
| 15/10/2014 | 23:30:00 | 67.0 | 87.3 | 53.7 | 54.9 | 54.9 | 54.3 | 57.9 | 59.1 | 59.1 | 61.8 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 15/10/2014 | 23:45:00 | 52.8 | 70.7 | 45.3 | 46.0 | 44.7 | 43.5 | 43.1 | 46.0 | 45.2 | 44.9 |
| 16/10/2014 | 00:00:00 | 69.6 | 90.1 | 56.8 | 53.4 | 53.8 | 55.0 | 55.5 | 59.1 | 56.9 | 58.0 |
| 16/10/2014 | 00:15:00 | 63.7 | 85.7 | 50.0 | 48.7 | 49.3 | 48.6 | 51.0 | 53.1 | 51.7 | 52.1 |
| 16/10/2014 | 00:30:00 | 56.6 | 82.6 | 46.5 | 46.2 | 45.5 | 43.0 | 46.2 | 48.9 | 45.1 | 45.9 |
| 16/10/2014 | 00:45:00 | 60.4 | 84.2 | 47.1 | 46.6 | 47.3 | 43.3 | 46.0 | 50.0 | 48.4 | 50.0 |
| 16/10/2014 | 01:00:00 | 35.3 | 46.5 | 41.3 | 42.6 | 43.4 | 40.0 | 40.5 | 41.3 | 40.6 | 37.9 |
| 16/10/2014 | 01:15:00 | 34.8 | 46.2 | 38.9 | 40.7 | 40.6 | 38.2 | 38.5 | 41.0 | 41.7 | 35.8 |
| 16/10/2014 | 01:30:00 | 56.1 | 76.5 | 47.1 | 46.9 | 46.7 | 44.8 | 46.5 | 50.1 | 49.2 | 50.6 |
| 16/10/2014 | 01:45:00 | 34.6 | 46.2 | 39.7 | 42.2 | 42.3 | 39.2 | 39.5 | 40.5 | 38.8 | 36.6 |
| 16/10/2014 | 02:00:00 | 33.0 | 47.7 | 39.1 | 40.3 | 40.8 | 38.8 | 38.9 | 40.2 | 39.3 | 36.1 |
| 16/10/2014 | 02:15:00 | 54.6 | 83.4 | 42.0 | 42.4 | 43.6 | 40.4 | 41.3 | 43.4 | 42.0 | 43.3 |
| 16/10/2014 | 02:30:00 | 52.4 | 73.5 | 46.2 | 46.8 | 47.1 | 43.3 | 45.5 | 46.5 | 46.1 | 45.5 |
| 16/10/2014 | 02:45:00 | 34.8 | 47.7 | 41.4 | 41.5 | 42.6 | 38.6 | 38.6 | 40.0 | 38.5 | 35.3 |
| 16/10/2014 | 03:00:00 | 61.0 | 86.7 | 46.6 | 45.6 | 44.9 | 43.9 | 46.6 | 48.0 | 46.0 | 46.2 |
| 16/10/2014 | 03:15:00 | 61.2 | 89.2 | 46.9 | 45.8 | 46.4 | 44.0 | 44.0 | 46.8 | 46.7 | 46.6 |
| 16/10/2014 | 03:30:00 | 47.8 | 66.5 | 41.5 | 43.0 | 42.9 | 39.9 | 40.9 | 41.9 | 42.4 | 42.4 |
| 16/10/2014 | 03:45:00 | 34.0 | 47.6 | 40.4 | 42.5 | 41.9 | 38.8 | 38.9 | 40.3 | 38.5 | 37.7 |
| 16/10/2014 | 04:00:00 | 59.4 | 83.4 | 48.3 | 46.8 | 46.6 | 45.4 | 46.9 | 48.5 | 45.4 | 45.8 |
| 16/10/2014 | 04:14:00 | 56.1 | 82.2 | 42.8 | 43.7 | 43.8 | 42.2 | 43.5 | 44.7 | 44.9 | 44.4 |
| 16/10/2014 | 04:30:00 | 55.2 | 77.3 | 46.8 | 44.9 | 44.2 | 43.9 | 44.1 | 48.3 | 47.2 | 47.1 |
| 16/10/2014 | 04:45:00 | 56.3 | 77.5 | 44.2 | 46.2 | 45.0 | 44.9 | 45.9 | 47.9 | 47.7 | 48.7 |
| 16/10/2014 | 05:00:00 | 46.5 | 69.2 | 42.0 | 42.8 | 43.6 | 43.9 | 41.0 | 43.3 | 44.3 | 43.6 |
| 16/10/2014 | 05:15:00 | 55.9 | 74.1 | 46.4 | 47.8 | 46.2 | 45.2 | 45.9 | 48.1 | 49.4 | 49.5 |
| 16/10/2014 | 05:29:00 | 63.2 | 83.0 | 49.5 | 50.5 | 49.7 | 57.1 | 62.2 | 59.3 | 59.6 | 54.0 |
| 16/10/2014 | 05:45:00 | 62.4 | 87.0 | 50.0 | 49.1 | 48.7 | 48.3 | 52.6 | 52.5 | 52.3 | 52.4 |
| 16/10/2014 | 06:00:00 | 62.1 | 81.0 | 50.7 | 50.3 | 52.1 | 51.5 | 55.8 | 62.4 | 64.1 | 66.1 |
| 16/10/2014 | 06:15:00 | 65.7 | 89.8 | 50.4 | 50.4 | 52.0 | 48.6 | 50.6 | 52.6 | 52.1 | 52.7 |
| 16/10/2014 | 06:30:00 | 64.5 | 86.5 | 51.3 | 50.4 | 50.6 | 49.5 | 52.7 | 54.5 | 54.5 | 53.7 |
| 16/10/2014 | 06:45:00 | 64.0 | 84.7 | 51.0 | 51.1 | 51.1 | 50.6 | 55.3 | 58.3 | 57.7 | 60.1 |
| 16/10/2014 | 07:00:00 | 67.0 | 91.5 | 53.6 | 53.3 | 55.2 | 56.6 | 59.1 | 62.6 | 63.9 | 65.9 |
| 16/10/2014 | 07:14:00 | 63.8 | 82.1 | 53.3 | 56.1 | 55.0 | 56.8 | 58.7 | 61.9 | 58.0 | 56.6 |
| 16/10/2014 | 07:30:00 | 67.9 | 88.1 | 54.5 | 54.3 | 54.0 | 55.2 | 58.9 | 62.4 | 61.4 | 63.5 |
| 16/10/2014 | 07:45:00 | 68.7 | 94.2 | 52.6 | 53.3 | 53.2 | 52.1 | 54.7 | 56.2 | 54.3 | 55.3 |
| 16/10/2014 | 08:00:00 | 68.5 | 87.0 | 55.1 | 57.4 | 57.7 | 61.5 | 59.6 | 62.0 | 62.5 | 59.2 |
| 16/10/2014 | 08:15:00 | 67.7 | 92.6 | 55.5 | 54.2 | 55.8 | 56.5 | 60.1 | 63.1 | 61.0 | 67.5 |
| 16/10/2014 | 08:30:00 | 69.8 | 86.1 | 58.8 | 59.2 | 64.0 | 64.2 | 64.3 | 67.5 | 65.0 | 66.1 |
| 16/10/2014 | 08:45:00 | 68.4 | 94.3 | 56.8 | 57.5 | 62.3 | 60.8 | 71.0 | 68.0 | 66.2 | 61.1 |
| 16/10/2014 | 09:00:00 | 70.4 | 88.6 | 57.0 | 60.7 | 61.9 | 60.7 | 63.2 | 67.8 | 67.0 | 67.5 |
| 16/10/2014 | 09:15:00 | 72.1 | 97.5 | 56.2 | 55.5 | 55.2 | 58.0 | 59.3 | 64.8 | 64.1 | 66.6 |
| 16/10/2014 | 09:30:00 | 78.7 | 109.5 | 55.8 | 55.2 | 54.6 | 55.6 | 58.9 | 62.9 | 61.7 | 63.4 |
| 16/10/2014 | 09:45:00 | 66.9 | 89.7 | 55.5 | 56.8 | 63.9 | 55.8 | 59.4 | 60.5 | 58.7 | 59.5 |
| 16/10/2014 | 09:59:00 | 66.7 | 84.1 | 57.0 | 57.8 | 64.7 | 61.6 | 68.3 | 64.0 | 62.9 | 59.4 |
| 16/10/2014 | 10:15:00 | 69.7 | 93.5 | 55.0 | 55.4 | 55.2 | 58.3 | 56.6 | 62.1 | 64.7 | 63.5 |
| 16/10/2014 | 10:30:00 | 69.2 | 92.3 | 55.6 | 57.5 | 58.3 | 59.6 | 59.9 | 63.4 | 62.6 | 64.1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 16/10/2014 | 10:44:00 | 63.3 | 83.9 | 54.4 | 55.4 | 56.4 | 57.1 | 56.9 | 63.8 | 60.6 | 62.6 |
| 16/10/2014 | 11:00:00 | 69.7 | 86.8 | 59.7 | 58.5 | 58.8 | 62.6 | 61.7 | 65.0 | 63.2 | 62.9 |
| 16/10/2014 | 11:15:00 | 67.8 | 88.7 | 55.1 | 55.3 | 55.8 | 58.4 | 59.4 | 62.8 | 64.1 | 66.5 |
| 16/10/2014 | 11:29:00 | 69.0 | 87.0 | 56.8 | 58.6 | 59.2 | 59.6 | 70.4 | 66.0 | 64.3 | 61.6 |
| 16/10/2014 | 11:45:00 | 64.9 | 86.6 | 54.3 | 57.3 | 58.4 | 60.5 | 59.1 | 61.6 | 62.4 | 65.7 |
| 16/10/2014 | 12:00:00 | 66.9 | 86.3 | 55.8 | 55.3 | 55.0 | 57.4 | 57.6 | 60.4 | 65.8 | 65.1 |
| 16/10/2014 | 12:15:00 | 69.2 | 91.2 | 55.8 | 56.1 | 57.5 | 59.4 | 59.6 | 69.7 | 66.3 | 62.0 |
| 16/10/2014 | 12:30:00 | 65.7 | 86.7 | 56.0 | 55.0 | 55.3 | 56.3 | 58.1 | 61.1 | 57.9 | 60.3 |
| 16/10/2014 | 12:45:00 | 63.5 | 81.6 | 54.5 | 54.5 | 54.3 | 56.2 | 57.6 | 63.0 | 60.6 | 63.4 |
| 16/10/2014 | 13:00:00 | 67.4 | 87.6 | 55.6 | 55.9 | 56.0 | 58.5 | 59.0 | 60.4 | 60.4 | 57.7 |
| 16/10/2014 | 13:15:00 | 67.6 | 90.7 | 54.4 | 54.1 | 53.9 | 56.3 | 56.9 | 62.0 | 60.9 | 63.9 |
| 16/10/2014 | 13:30:00 | 66.7 | 88.3 | 54.8 | 53.8 | 54.2 | 53.6 | 57.6 | 62.6 | 63.2 | 66.2 |
| 16/10/2014 | 13:45:00 | 62.7 | 82.1 | 53.0 | 52.6 | 52.6 | 53.6 | 56.5 | 60.9 | 60.6 | 61.0 |
| 16/10/2014 | 14:00:00 | 68.9 | 88.4 | 55.9 | 57.0 | 56.2 | 59.3 | 60.3 | 62.2 | 60.7 | 59.9 |
| 16/10/2014 | 14:15:00 | 69.9 | 94.4 | 55.9 | 55.4 | 55.8 | 58.6 | 57.0 | 61.9 | 62.3 | 65.8 |
| 16/10/2014 | 14:30:00 | 70.7 | 95.1 | 57.7 | 57.6 | 59.4 | 65.4 | 64.5 | 64.5 | 62.0 | 64.8 |
| 16/10/2014 | 14:44:00 | 68.0 | 99.2 | 55.4 | 55.6 | 54.4 | 57.8 | 63.3 | 62.9 | 60.1 | 65.5 |
| 16/10/2014 | 15:00:00 | 67.7 | 89.4 | 54.7 | 55.0 | 55.2 | 58.1 | 58.5 | 63.0 | 58.9 | 57.3 |
| 16/10/2014 | 15:15:00 | 68.3 | 92.8 | 55.4 | 54.8 | 55.9 | 57.9 | 59.4 | 65.1 | 64.0 | 67.5 |
| 16/10/2014 | 15:30:00 | 68.8 | 97.4 | 53.6 | 54.1 | 53.8 | 56.5 | 56.2 | 56.1 | 55.2 | 55.3 |
| 16/10/2014 | 15:44:00 | 62.6 | 83.4 | 52.4 | 52.6 | 52.9 | 55.7 | 55.0 | 60.4 | 60.8 | 62.4 |
| 16/10/2014 | 16:00:00 | 67.5 | 84.9 | 54.3 | 55.4 | 56.9 | 57.4 | 59.0 | 62.9 | 62.5 | 63.1 |
| 16/10/2014 | 16:15:00 | 71.0 | 96.2 | 57.3 | 57.1 | 57.2 | 57.5 | 63.8 | 62.5 | 64.1 | 65.5 |
| 16/10/2014 | 16:30:00 | 66.8 | 84.9 | 56.3 | 56.3 | 59.8 | 60.5 | 60.5 | 65.1 | 63.7 | 64.7 |
| 16/10/2014 | 16:45:00 | 62.4 | 85.6 | 53.9 | 53.2 | 53.3 | 55.8 | 54.1 | 58.1 | 61.1 | 62.5 |
| 16/10/2014 | 17:00:00 | 67.7 | 87.8 | 55.9 | 56.8 | 57.2 | 61.0 | 59.5 | 64.3 | 63.6 | 64.2 |
| 16/10/2014 | 17:15:00 | 70.4 | 91.3 | 56.0 | 57.2 | 57.7 | 59.6 | 59.9 | 66.1 | 69.6 | 66.0 |
| 16/10/2014 | 17:30:00 | 67.7 | 88.3 | 55.5 | 56.0 | 55.5 | 60.9 | 62.6 | 61.2 | 61.5 | 57.9 |
| 16/10/2014 | 17:45:00 | 69.1 | 91.8 | 54.1 | 57.2 | 56.2 | 61.2 | 59.4 | 61.4 | 61.2 | 66.8 |
| 16/10/2014 | 18:00:00 | 68.0 | 85.8 | 55.2 | 55.2 | 54.8 | 58.5 | 59.6 | 61.9 | 60.1 | 58.4 |
| 16/10/2014 | 18:15:00 | 71.5 | 93.3 | 55.7 | 55.8 | 57.0 | 56.9 | 58.8 | 62.5 | 63.4 | 66.6 |
| 16/10/2014 | 18:30:00 | 70.0 | 95.4 | 54.6 | 55.2 | 56.9 | 56.7 | 58.5 | 61.8 | 66.9 | 63.2 |
| 16/10/2014 | 18:45:00 | 67.8 | 89.9 | 54.4 | 53.5 | 54.0 | 53.2 | 57.5 | 59.3 | 58.9 | 63.9 |
| 16/10/2014 | 19:00:00 | 69.9 | 95.4 | 54.2 | 55.9 | 54.8 | 58.1 | 58.3 | 62.9 | 58.9 | 64.0 |
| 16/10/2014 | 19:15:00 | 67.9 | 88.7 | 52.8 | 53.2 | 53.6 | 55.1 | 56.7 | 60.8 | 62.0 | 63.8 |
| 16/10/2014 | 19:29:00 | 67.3 | 92.1 | 52.4 | 52.1 | 56.7 | 54.8 | 57.1 | 59.7 | 62.0 | 64.8 |
| 16/10/2014 | 19:45:00 | 64.0 | 86.1 | 52.1 | 52.1 | 51.8 | 51.4 | 54.1 | 57.4 | 57.7 | 60.0 |
| 16/10/2014 | 20:00:00 | 68.8 | 93.5 | 53.8 | 54.9 | 55.6 | 54.8 | 59.0 | 65.6 | 60.2 | 64.7 |
| 16/10/2014 | 20:15:00 | 65.0 | 87.7 | 51.6 | 51.5 | 52.0 | 51.6 | 55.6 | 59.8 | 61.3 | 62.4 |
| 16/10/2014 | 20:30:00 | 67.1 | 89.7 | 54.9 | 52.3 | 52.0 | 52.0 | 56.7 | 58.4 | 56.6 | 56.8 |
| 16/10/2014 | 20:45:00 | 65.9 | 88.0 | 51.4 | 50.9 | 50.8 | 50.6 | 53.5 | 59.5 | 59.9 | 62.6 |
| 16/10/2014 | 21:00:00 | 65.8 | 87.4 | 55.5 | 56.4 | 54.7 | 57.2 | 57.4 | 59.8 | 59.6 | 58.8 |
| 16/10/2014 | 21:15:00 | 63.4 | 84.1 | 51.4 | 51.0 | 51.3 | 51.4 | 55.5 | 61.6 | 58.5 | 60.5 |
| 16/10/2014 | 21:30:00 | 66.6 | 85.2 | 52.9 | 51.9 | 54.1 | 51.9 | 56.2 | 61.1 | 61.6 | 63.7 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 16/10/2014 | 21:45:00 | 64.9 | 89.8 | 54.1 | 55.0 | 67.2 | 56.1 | 68.3 | 64.6 | 65.1 | 63.7 |
| 16/10/2014 | 22:00:00 | 66.7 | 92.8 | 52.0 | 52.4 | 51.9 | 53.5 | 52.8 | 58.4 | 63.5 | 57.3 |
| 16/10/2014 | 22:15:00 | 63.9 | 81.3 | 52.0 | 57.4 | 57.0 | 61.6 | 63.7 | 66.6 | 64.3 | 66.0 |
| 16/10/2014 | 22:30:00 | 64.0 | 88.8 | 50.5 | 50.2 | 49.0 | 53.1 | 50.9 | 54.0 | 54.8 | 56.0 |
| 16/10/2014 | 22:45:00 | 69.6 | 92.1 | 53.3 | 54.4 | 54.8 | 55.0 | 59.6 | 64.0 | 62.9 | 64.4 |
| 16/10/2014 | 23:00:00 | 62.1 | 85.0 | 49.1 | 48.9 | 49.2 | 47.6 | 50.7 | 56.3 | 59.1 | 61.5 |
| 16/10/2014 | 23:15:00 | 66.9 | 91.3 | 50.6 | 51.0 | 50.2 | 48.8 | 53.2 | 55.8 | 58.3 | 54.9 |
| 16/10/2014 | 23:30:00 | 61.8 | 79.6 | 55.7 | 51.7 | 53.2 | 57.4 | 60.4 | 63.5 | 61.7 | 66.2 |
| 16/10/2014 | 23:45:00 | 61.9 | 82.7 | 49.5 | 48.6 | 48.4 | 46.5 | 47.8 | 52.1 | 50.9 | 52.7 |
| 16/10/2014 | 23:59:00 | 61.7 | 81.5 | 50.8 | 49.4 | 48.1 | 52.8 | 56.0 | 60.8 | 57.0 | 56.8 |
| 17/10/2014 | 00:15:00 | 65.1 | 88.1 | 49.4 | 49.1 | 49.3 | 48.1 | 52.9 | 53.0 | 52.3 | 52.3 |
| 17/10/2014 | 00:30:00 | 39.8 | 50.2 | 45.5 | 44.3 | 43.2 | 41.0 | 41.9 | 42.4 | 42.1 | 41.1 |
| 17/10/2014 | 00:45:00 | 62.3 | 86.1 | 47.6 | 47.1 | 47.5 | 44.3 | 45.0 | 48.7 | 46.9 | 48.4 |
| 17/10/2014 | 01:00:00 | 34.9 | 49.0 | 42.0 | 42.3 | 42.1 | 39.6 | 39.8 | 41.3 | 40.0 | 38.2 |
| 17/10/2014 | 01:15:00 | 50.2 | 70.8 | 44.1 | 43.8 | 43.5 | 41.2 | 42.7 | 45.8 | 46.4 | 46.1 |
| 17/10/2014 | 01:30:00 | 43.8 | 63.7 | 41.1 | 42.5 | 42.3 | 38.8 | 39.4 | 44.0 | 45.5 | 44.3 |
| 17/10/2014 | 01:45:00 | 46.5 | 70.2 | 41.4 | 44.0 | 43.0 | 43.0 | 40.0 | 42.2 | 44.1 | 43.8 |
| 17/10/2014 | 02:00:00 | 36.8 | 54.7 | 40.5 | 42.4 | 43.2 | 42.0 | 40.7 | 42.3 | 43.0 | 41.6 |
| 17/10/2014 | 02:15:00 | 35.7 | 54.7 | 40.5 | 42.9 | 42.1 | 39.8 | 39.6 | 41.2 | 42.5 | 41.5 |
| 17/10/2014 | 02:30:00 | 54.2 | 77.1 | 43.1 | 43.7 | 43.8 | 41.8 | 42.6 | 45.1 | 45.7 | 45.9 |
| 17/10/2014 | 02:45:00 | 38.1 | 57.2 | 42.9 | 44.0 | 44.0 | 41.1 | 40.6 | 41.8 | 42.0 | 41.3 |
| 17/10/2014 | 03:00:00 | 55.1 | 77.4 | 44.8 | 44.5 | 44.8 | 50.6 | 51.3 | 54.2 | 55.4 | 59.1 |
| 17/10/2014 | 03:15:00 | 57.1 | 83.1 | 49.1 | 45.9 | 46.9 | 46.0 | 52.7 | 55.3 | 56.2 | 62.5 |
| 17/10/2014 | 03:30:00 | 56.8 | 79.1 | 43.8 | 44.9 | 46.4 | 43.9 | 44.5 | 47.1 | 48.2 | 47.7 |
| 17/10/2014 | 03:45:00 | 38.6 | 63.4 | 40.7 | 41.6 | 42.3 | 39.5 | 39.2 | 41.3 | 42.4 | 41.6 |
| 17/10/2014 | 04:00:00 | 54.1 | 77.1 | 47.9 | 46.0 | 44.9 | 43.4 | 45.1 | 46.2 | 46.1 | 45.9 |
| 17/10/2014 | 04:15:00 | 36.5 | 49.7 | 40.9 | 42.4 | 42.2 | 39.9 | 40.3 | 42.6 | 43.0 | 42.3 |
| 17/10/2014 | 04:30:00 | 55.8 | 79.5 | 44.1 | 45.0 | 45.0 | 44.3 | 44.2 | 45.8 | 47.3 | 49.2 |
| 17/10/2014 | 04:44:00 | 59.3 | 82.3 | 47.5 | 47.8 | 61.4 | 54.3 | 47.3 | 49.9 | 50.7 | 51.0 |
| 17/10/2014 | 05:00:00 | 47.6 | 72.0 | 42.7 | 43.8 | 43.1 | 40.8 | 40.9 | 42.8 | 44.1 | 44.1 |
| 17/10/2014 | 05:15:00 | 58.1 | 78.9 | 47.2 | 49.8 | 46.6 | 48.9 | 50.2 | 50.8 | 63.6 | 51.6 |
| 17/10/2014 | 05:30:00 | 64.5 | 85.1 | 52.2 | 50.7 | 52.1 | 54.9 | 55.6 | 58.9 | 59.5 | 61.1 |
| 17/10/2014 | 05:44:00 | 63.0 | 84.8 | 52.3 | 49.7 | 49.6 | 49.6 | 55.8 | 58.6 | 59.6 | 65.5 |
| 17/10/2014 | 06:00:00 | 62.8 | 82.3 | 51.7 | 51.3 | 51.0 | 51.7 | 54.8 | 61.8 | 61.2 | 63.4 |
| 17/10/2014 | 06:15:00 | 66.1 | 91.9 | 49.8 | 50.3 | 49.5 | 48.2 | 50.6 | 52.0 | 51.7 | 52.5 |
| 17/10/2014 | 06:29:00 | 63.9 | 84.7 | 51.5 | 51.3 | 51.0 | 50.6 | 55.0 | 55.9 | 55.4 | 55.3 |
| 17/10/2014 | 06:45:00 | 63.3 | 85.8 | 51.3 | 52.0 | 52.3 | 51.9 | 55.2 | 58.7 | 60.3 | 62.0 |
| 17/10/2014 | 07:00:00 | 65.3 | 89.1 | 52.5 | 53.2 | 53.4 | 54.4 | 55.5 | 58.2 | 64.2 | 60.4 |
| 17/10/2014 | 07:15:00 | 63.5 | 82.5 | 53.8 | 53.3 | 53.4 | 52.8 | 57.0 | 63.0 | 57.7 | 59.8 |
| 17/10/2014 | 07:30:00 | 66.6 | 85.2 | 54.6 | 56.8 | 55.1 | 58.0 | 60.0 | 64.5 | 65.3 | 67.0 |
| 17/10/2014 | 07:45:00 | 65.9 | 90.0 | 52.3 | 52.7 | 52.3 | 52.7 | 53.9 | 54.9 | 53.4 | 55.7 |
| 17/10/2014 | 08:00:00 | 73.8 | 105.3 | 53.7 | 55.6 | 54.0 | 54.9 | 60.2 | 64.3 | 59.6 | 58.8 |
| 17/10/2014 | 08:14:00 | 67.4 | 88.6 | 55.4 | 54.7 | 55.7 | 59.0 | 58.0 | 62.3 | 60.6 | 64.8 |
| 17/10/2014 | 08:30:00 | 70.2 | 98.1 | 55.0 | 57.5 | 56.9 | 60.7 | 60.6 | 65.6 | 63.0 | 63.6 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17/10/2014 | 08:45:00 | 66.5 | 84.8 | 53.6 | 57.6 | 57.2 | 56.8 | 62.2 | 72.9 | 69.2 | 61.1 |
| 17/10/2014 | 09:00:00 | 73.4 | 102.3 | 56.1 | 56.7 | 57.9 | 57.1 | 59.8 | 64.1 | 64.5 | 66.3 |
| 17/10/2014 | 09:15:00 | 67.8 | 88.5 | 55.5 | 55.8 | 55.5 | 57.6 | 59.2 | 65.7 | 68.8 | 65.4 |
| 17/10/2014 | 09:30:00 | 66.7 | 84.0 | 54.8 | 54.4 | 54.8 | 54.2 | 57.9 | 61.5 | 61.8 | 63.1 |
| 17/10/2014 | 09:45:00 | 66.5 | 88.6 | 53.0 | 53.5 | 53.8 | 57.5 | 55.6 | 56.5 | 54.5 | 58.5 |
| 17/10/2014 | 10:00:00 | 66.3 | 84.4 | 55.6 | 57.2 | 56.7 | 60.5 | 59.9 | 63.1 | 60.9 | 62.4 |
| 17/10/2014 | 10:15:00 | 67.0 | 86.5 | 55.8 | 56.6 | 56.3 | 58.0 | 63.6 | 72.5 | 67.8 | 62.8 |
| 17/10/2014 | 10:30:00 | 66.0 | 87.0 | 56.0 | 57.4 | 58.2 | 63.1 | 58.7 | 62.4 | 60.8 | 56.7 |
| 17/10/2014 | 10:45:00 | 65.3 | 92.7 | 54.1 | 54.1 | 54.5 | 58.0 | 55.9 | 62.1 | 58.7 | 60.1 |
| 17/10/2014 | 11:00:00 | 68.8 | 93.1 | 55.9 | 56.6 | 56.6 | 57.5 | 57.9 | 60.0 | 63.7 | 65.3 |
| 17/10/2014 | 11:14:00 | 68.9 | 90.9 | 60.2 | 57.7 | 57.6 | 66.3 | 63.0 | 66.7 | 62.0 | 65.8 |
| 17/10/2014 | 11:30:00 | 68.6 | 85.5 | 56.8 | 64.3 | 60.0 | 62.0 | 61.7 | 66.2 | 63.0 | 62.5 |
| 17/10/2014 | 11:45:00 | 65.7 | 90.3 | 53.8 | 54.4 | 54.7 | 56.3 | 58.8 | 62.1 | 61.3 | 63.5 |
| 17/10/2014 | 12:00:00 | 68.0 | 87.0 | 55.6 | 57.3 | 55.9 | 58.7 | 59.9 | 63.6 | 60.3 | 56.8 |
| 17/10/2014 | 12:15:00 | 69.5 | 95.7 | 55.5 | 55.3 | 56.5 | 58.1 | 60.8 | 64.7 | 65.5 | 68.7 |
| 17/10/2014 | 12:30:00 | 65.8 | 85.3 | 56.0 | 55.9 | 56.3 | 58.9 | 57.6 | 58.3 | 56.8 | 57.0 |
| 17/10/2014 | 12:44:00 | 63.5 | 82.5 | 54.3 | 54.3 | 54.4 | 56.7 | 55.9 | 61.0 | 62.9 | 64.5 |
| 17/10/2014 | 13:00:00 | 67.7 | 87.1 | 57.3 | 58.4 | 57.3 | 59.0 | 60.9 | 67.2 | 59.4 | 57.1 |
| 17/10/2014 | 13:15:00 | 68.1 | 90.7 | 56.4 | 55.1 | 54.9 | 60.0 | 57.0 | 60.4 | 60.4 | 63.0 |

**Position B: Commercial Unit**

| Date | Time | $L_{Aeq}$ | $L_{Amax}$ | $L_{Aeq}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| | | | | | | | | | | | |
| 14/10/2014 | 16:45:00 | 60.5 | 78.6 | 48.3 | 50.1 | 53.7 | 56.8 | 60.9 | 63.4 | 62.8 | 58.7 |
| 14/10/2014 | 17:00:00 | 61.4 | 78.9 | 50.2 | 54.1 | 60.0 | 66.8 | 64.3 | 64.3 | 63.8 | 60.1 |
| 14/10/2014 | 17:15:00 | 58.6 | 77.9 | 49.1 | 53.1 | 54.8 | 56.6 | 59.0 | 60.7 | 60.4 | 56.4 |
| 14/10/2014 | 17:30:00 | 58.8 | 83.3 | 48.1 | 50.2 | 53.6 | 56.7 | 59.1 | 61.2 | 62.2 | 57.2 |
| 14/10/2014 | 17:45:00 | 58.8 | 76.9 | 48.0 | 49.9 | 54.5 | 56.7 | 59.2 | 62.1 | 62.1 | 59.6 |
| 14/10/2014 | 18:00:00 | 56.9 | 72.1 | 49.5 | 52.1 | 54.7 | 60.7 | 64.5 | 64.0 | 62.2 | 56.9 |
| 14/10/2014 | 18:15:00 | 55.9 | 70.9 | 47.5 | 50.1 | 52.2 | 56.5 | 59.1 | 60.4 | 62.1 | 58.9 |
| 14/10/2014 | 18:30:00 | 54.9 | 74.6 | 47.7 | 49.0 | 52.9 | 56.8 | 61.8 | 60.0 | 58.8 | 56.5 |
| 14/10/2014 | 18:45:00 | 57.4 | 82.6 | 47.8 | 49.7 | 53.4 | 57.9 | 63.5 | 64.0 | 63.2 | 59.5 |
| 14/10/2014 | 19:00:00 | 55.4 | 72.1 | 48.0 | 51.6 | 55.3 | 57.1 | 60.8 | 62.6 | 62.2 | 57.4 |
| 14/10/2014 | 19:15:00 | 57.5 | 76.3 | 47.9 | 50.8 | 53.3 | 61.4 | 61.1 | 64.1 | 63.1 | 58.5 |
| 14/10/2014 | 19:30:00 | 54.6 | 67.8 | 46.4 | 49.8 | 52.9 | 58.3 | 59.5 | 60.1 | 58.8 | 55.6 |
| 14/10/2014 | 19:45:00 | 54.4 | 70.2 | 44.9 | 45.8 | 49.1 | 54.1 | 58.2 | 60.2 | 59.8 | 54.6 |
| 14/10/2014 | 20:00:00 | 54.2 | 72.7 | 45.7 | 46.5 | 49.7 | 53.7 | 58.0 | 59.7 | 60.4 | 58.0 |
| 14/10/2014 | 20:15:00 | 54.2 | 78.9 | 46.9 | 49.7 | 51.1 | 53.9 | 58.8 | 60.8 | 61.2 | 55.3 |
| 14/10/2014 | 20:30:00 | 53.0 | 71.0 | 46.2 | 47.4 | 51.8 | 56.4 | 58.3 | 59.4 | 59.9 | 57.4 |
| 14/10/2014 | 20:45:00 | 54.2 | 66.8 | 47.1 | 50.8 | 53.9 | 55.6 | 57.5 | 61.2 | 60.6 | 55.9 |
| 14/10/2014 | 21:00:00 | 54.7 | 74.2 | 45.5 | 48.7 | 49.9 | 52.9 | 59.0 | 60.5 | 59.0 | 55.4 |
| 14/10/2014 | 21:15:00 | 54.2 | 75.4 | 45.6 | 46.1 | 47.9 | 52.2 | 56.2 | 59.2 | 60.7 | 56.7 |
| 14/10/2014 | 21:30:00 | 52.1 | 70.5 | 46.3 | 46.8 | 48.4 | 52.4 | 55.7 | 54.5 | 55.0 | 52.2 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/10/2014 | 21:45:00 | 52.4 | 69.9 | 45.1 | 45.8 | 48.9 | 53.0 | 54.1 | 51.8 | 55.3 | 53.2 |
| 14/10/2014 | 22:00:00 | 51.8 | 66.7 | 45.1 | 48.0 | 52.4 | 55.2 | 59.2 | 59.1 | 60.7 | 53.6 |
| 14/10/2014 | 22:14:00 | 51.8 | 67.9 | 45.8 | 47.8 | 50.3 | 53.0 | 53.4 | 54.1 | 55.7 | 53.1 |
| 14/10/2014 | 22:30:00 | 52.6 | 69.2 | 44.5 | 44.5 | 48.2 | 53.0 | 54.7 | 57.8 | 56.1 | 58.7 |
| 14/10/2014 | 22:45:00 | 48.1 | 66.7 | 44.7 | 45.7 | 45.8 | 51.5 | 52.0 | 52.5 | 49.6 | 46.7 |
| 14/10/2014 | 23:00:00 | 53.0 | 71.8 | 43.4 | 46.3 | 51.3 | 52.3 | 59.7 | 59.0 | 57.2 | 57.1 |
| 14/10/2014 | 23:15:00 | 51.3 | 69.1 | 43.3 | 44.0 | 47.7 | 51.5 | 51.3 | 55.3 | 57.1 | 58.1 |
| 14/10/2014 | 23:30:00 | 48.6 | 68.2 | 43.1 | 43.6 | 45.1 | 49.6 | 49.6 | 49.8 | 50.2 | 44.1 |
| 14/10/2014 | 23:45:00 | 48.4 | 67.3 | 43.1 | 43.3 | 46.0 | 50.5 | 55.2 | 58.3 | 55.2 | 43.3 |
| 15/10/2014 | 00:00:00 | 45.1 | 65.1 | 42.8 | 44.3 | 46.7 | 48.1 | 51.9 | 51.5 | 48.0 | 45.0 |
| 15/10/2014 | 00:14:00 | 50.1 | 72.5 | 43.3 | 44.4 | 47.3 | 49.0 | 56.0 | 62.3 | 61.8 | 55.0 |
| 15/10/2014 | 00:30:00 | 49.9 | 69.3 | 41.7 | 43.1 | 45.4 | 47.1 | 52.0 | 53.6 | 56.1 | 53.1 |
| 15/10/2014 | 00:45:00 | 46.3 | 67.4 | 41.2 | 44.1 | 47.3 | 51.9 | 56.3 | 52.3 | 53.4 | 52.3 |
| 15/10/2014 | 01:00:00 | 47.3 | 67.1 | 37.5 | 39.2 | 42.8 | 47.5 | 49.8 | 56.6 | 50.9 | 47.6 |
| 15/10/2014 | 01:15:00 | 45.8 | 64.9 | 37.3 | 38.3 | 41.5 | 45.2 | 46.3 | 51.0 | 52.6 | 47.6 |
| 15/10/2014 | 01:30:00 | 46.4 | 63.9 | 39.2 | 41.9 | 45.5 | 50.2 | 49.8 | 56.0 | 58.0 | 51.7 |
| 15/10/2014 | 01:45:00 | 44.2 | 64.6 | 36.8 | 39.3 | 43.2 | 46.0 | 51.2 | 54.6 | 52.0 | 44.7 |
| 15/10/2014 | 02:00:00 | 46.2 | 67.8 | 46.5 | 47.5 | 47.4 | 49.0 | 48.5 | 51.4 | 51.1 | 49.2 |
| 15/10/2014 | 02:14:00 | 45.6 | 68.7 | 38.7 | 40.8 | 43.6 | 45.9 | 44.1 | 44.6 | 47.7 | 44.9 |
| 15/10/2014 | 02:30:00 | 43.9 | 63.8 | 39.1 | 41.5 | 44.4 | 46.2 | 44.0 | 49.7 | 49.3 | 39.4 |
| 15/10/2014 | 02:45:00 | 42.6 | 65.2 | 37.7 | 39.5 | 43.2 | 53.0 | 48.6 | 46.8 | 50.6 | 43.5 |
| 15/10/2014 | 03:00:00 | 45.0 | 66.3 | 37.0 | 38.2 | 43.2 | 54.3 | 46.4 | 46.5 | 48.0 | 43.3 |
| 15/10/2014 | 03:15:00 | 39.3 | 54.4 | 42.4 | 41.7 | 43.5 | 54.0 | 45.4 | 43.5 | 43.6 | 42.6 |
| 15/10/2014 | 03:30:00 | 44.7 | 67.6 | 40.3 | 40.5 | 43.1 | 53.7 | 54.8 | 51.0 | 44.1 | 40.6 |
| 15/10/2014 | 03:45:00 | 48.2 | 70.9 | 39.2 | 41.2 | 41.2 | 53.2 | 45.8 | 50.0 | 57.3 | 55.3 |
| 15/10/2014 | 04:00:00 | 48.7 | 70.2 | 43.4 | 46.9 | 45.8 | 49.3 | 51.7 | 58.5 | 57.0 | 52.9 |
| 15/10/2014 | 04:15:00 | 42.9 | 63.8 | 39.7 | 39.8 | 42.4 | 45.5 | 45.8 | 44.0 | 47.4 | 45.3 |
| 15/10/2014 | 04:30:00 | 43.9 | 66.2 | 37.7 | 38.2 | 42.6 | 44.9 | 47.9 | 48.5 | 48.8 | 44.0 |
| 15/10/2014 | 04:45:00 | 46.1 | 67.1 | 41.0 | 42.8 | 43.3 | 46.0 | 48.0 | 46.1 | 53.9 | 45.5 |
| 15/10/2014 | 04:59:00 | 42.6 | 64.2 | 39.2 | 39.7 | 40.4 | 42.6 | 44.9 | 48.3 | 46.1 | 47.2 |
| 15/10/2014 | 05:15:00 | 46.3 | 63.9 | 42.3 | 42.4 | 45.2 | 46.2 | 48.3 | 52.1 | 53.8 | 45.4 |
| 15/10/2014 | 05:30:00 | 47.3 | 64.2 | 43.1 | 44.3 | 46.3 | 51.3 | 54.2 | 54.4 | 55.2 | 51.1 |
| 15/10/2014 | 05:45:00 | 48.1 | 66.7 | 44.8 | 43.4 | 45.2 | 47.4 | 51.3 | 51.7 | 50.4 | 48.3 |
| 15/10/2014 | 05:59:00 | 50.4 | 69.2 | 43.7 | 43.5 | 45.6 | 47.9 | 50.4 | 53.7 | 56.0 | 52.7 |
| 15/10/2014 | 06:15:00 | 48.7 | 68.3 | 43.0 | 43.3 | 44.6 | 51.1 | 50.8 | 52.5 | 51.5 | 48.6 |
| 15/10/2014 | 06:30:00 | 52.0 | 68.1 | 44.9 | 45.6 | 49.0 | 53.2 | 55.9 | 59.0 | 58.0 | 54.0 |
| 15/10/2014 | 06:45:00 | 57.0 | 76.8 | 52.3 | 52.9 | 54.0 | 57.3 | 61.2 | 62.9 | 64.1 | 59.8 |
| 15/10/2014 | 07:00:00 | 54.0 | 70.7 | 47.5 | 50.2 | 52.3 | 55.6 | 58.1 | 61.4 | 62.6 | 59.1 |
| 15/10/2014 | 07:15:00 | 57.1 | 73.2 | 48.3 | 51.6 | 53.5 | 56.4 | 60.0 | 62.2 | 62.4 | 61.4 |
| 15/10/2014 | 07:30:00 | 57.6 | 73.1 | 49.6 | 52.7 | 55.0 | 57.1 | 59.9 | 64.1 | 63.9 | 60.3 |
| 15/10/2014 | 07:45:00 | 57.8 | 71.8 | 51.1 | 56.0 | 57.4 | 64.0 | 63.1 | 64.7 | 65.3 | 60.9 |
| 15/10/2014 | 08:00:00 | 58.8 | 73.5 | 53.2 | 55.9 | 57.8 | 60.3 | 62.3 | 66.4 | 65.9 | 60.4 |
| 15/10/2014 | 08:14:00 | 58.9 | 73.5 | 52.6 | 54.4 | 55.9 | 58.1 | 61.9 | 63.5 | 63.2 | 60.0 |
| 15/10/2014 | 08:30:00 | 58.2 | 74.9 | 54.0 | 56.0 | 67.2 | 61.1 | 64.0 | 65.9 | 63.7 | 60.3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 15/10/2014 | 08:45:00 | 60.4 | 78.1 | 52.2 | 54.9 | 61.9 | 60.1 | 62.1 | 64.8 | 66.0 | 62.8 |
| 15/10/2014 | 09:00:00 | 59.9 | 75.5 | 51.0 | 55.4 | 59.1 | 62.3 | 64.1 | 65.2 | 63.5 | 59.7 |
| 15/10/2014 | 09:15:00 | 59.1 | 75.9 | 49.2 | 53.0 | 55.6 | 58.4 | 62.5 | 62.6 | 63.6 | 60.3 |
| 15/10/2014 | 09:30:00 | 59.6 | 75.7 | 51.6 | 54.5 | 57.0 | 60.1 | 65.0 | 66.6 | 66.4 | 61.1 |
| 15/10/2014 | 09:45:00 | 59.3 | 76.6 | 50.1 | 51.7 | 55.6 | 59.8 | 61.0 | 62.7 | 64.0 | 57.9 |
| 15/10/2014 | 10:00:00 | 59.3 | 76.8 | 49.7 | 52.7 | 56.4 | 59.7 | 60.1 | 60.6 | 61.7 | 59.4 |
| 15/10/2014 | 10:15:00 | 59.5 | 77.1 | 49.6 | 52.4 | 54.9 | 57.8 | 59.3 | 61.7 | 62.2 | 60.2 |
| 15/10/2014 | 10:30:00 | 60.0 | 80.3 | 53.1 | 58.7 | 62.1 | 60.2 | 62.8 | 63.0 | 63.0 | 61.7 |
| 15/10/2014 | 10:44:00 | 59.9 | 77.8 | 51.2 | 53.9 | 56.0 | 61.4 | 62.8 | 64.8 | 68.6 | 63.3 |
| 15/10/2014 | 11:00:00 | 59.6 | 78.1 | 52.0 | 55.5 | 58.3 | 62.2 | 63.3 | 66.4 | 66.6 | 63.8 |
| 15/10/2014 | 11:15:00 | 60.0 | 78.4 | 51.4 | 55.1 | 57.4 | 59.5 | 62.0 | 63.8 | 64.5 | 59.9 |
| 15/10/2014 | 11:30:00 | 58.9 | 78.1 | 51.0 | 53.8 | 57.7 | 62.0 | 62.9 | 60.9 | 63.1 | 59.1 |
| 15/10/2014 | 11:45:00 | 59.1 | 77.7 | 49.8 | 52.5 | 55.0 | 59.6 | 61.2 | 59.5 | 60.5 | 59.6 |
| 15/10/2014 | 12:00:00 | 58.6 | 78.1 | 50.1 | 54.2 | 55.3 | 58.2 | 61.0 | 60.9 | 60.0 | 59.3 |
| 15/10/2014 | 12:15:00 | 61.4 | 78.1 | 51.4 | 54.2 | 57.5 | 59.1 | 60.0 | 62.3 | 62.0 | 61.9 |
| 15/10/2014 | 12:30:00 | 60.7 | 77.8 | 52.5 | 56.3 | 57.0 | 58.9 | 61.0 | 62.4 | 63.8 | 61.2 |
| 15/10/2014 | 12:45:00 | 60.7 | 77.0 | 50.7 | 54.4 | 57.5 | 60.2 | 65.4 | 63.5 | 62.7 | 60.1 |
| 15/10/2014 | 13:00:00 | 59.2 | 78.3 | 52.7 | 55.9 | 59.2 | 59.8 | 61.0 | 61.4 | 62.6 | 58.2 |
| 15/10/2014 | 13:15:00 | 59.1 | 77.1 | 51.0 | 53.4 | 55.3 | 60.7 | 61.9 | 64.3 | 64.6 | 60.8 |
| 15/10/2014 | 13:30:00 | 60.7 | 79.4 | 53.7 | 55.6 | 58.1 | 60.7 | 61.6 | 62.6 | 64.0 | 61.9 |
| 15/10/2014 | 13:45:00 | 58.5 | 77.3 | 53.4 | 56.4 | 60.0 | 59.2 | 60.6 | 63.1 | 62.8 | 59.5 |
| 15/10/2014 | 14:00:00 | 60.8 | 78.0 | 51.1 | 53.4 | 56.6 | 59.5 | 63.1 | 62.7 | 64.7 | 61.5 |
| 15/10/2014 | 14:15:00 | 59.9 | 78.2 | 50.1 | 52.9 | 54.5 | 57.2 | 59.8 | 60.6 | 61.5 | 59.7 |
| 15/10/2014 | 14:30:00 | 61.2 | 78.5 | 53.0 | 55.3 | 57.5 | 59.7 | 62.7 | 64.5 | 66.2 | 61.4 |
| 15/10/2014 | 14:45:00 | 60.2 | 78.1 | 49.5 | 52.6 | 56.0 | 61.0 | 63.6 | 62.2 | 61.5 | 58.1 |
| 15/10/2014 | 15:00:00 | 59.6 | 77.8 | 52.6 | 55.4 | 57.4 | 59.2 | 61.1 | 63.2 | 62.3 | 59.5 |
| 15/10/2014 | 15:15:00 | 59.9 | 77.8 | 52.6 | 55.6 | 56.5 | 58.8 | 61.9 | 61.9 | 62.6 | 59.7 |
| 15/10/2014 | 15:30:00 | 59.6 | 77.0 | 52.6 | 55.9 | 67.9 | 61.7 | 63.9 | 64.8 | 64.1 | 59.5 |
| 15/10/2014 | 15:45:00 | 58.9 | 77.7 | 49.0 | 52.7 | 55.5 | 56.8 | 61.0 | 62.1 | 62.2 | 56.7 |
| 15/10/2014 | 15:59:00 | 60.6 | 78.1 | 52.5 | 55.8 | 57.2 | 59.9 | 62.0 | 63.6 | 63.7 | 58.5 |
| 15/10/2014 | 16:15:00 | 59.0 | 77.7 | 53.1 | 56.6 | 58.6 | 64.1 | 62.9 | 62.6 | 63.9 | 59.3 |
| 15/10/2014 | 16:30:00 | 59.5 | 77.9 | 49.4 | 52.2 | 54.8 | 57.2 | 62.1 | 63.0 | 59.7 | 55.9 |
| 15/10/2014 | 16:44:00 | 60.7 | 78.6 | 49.8 | 50.6 | 54.4 | 58.9 | 60.0 | 62.4 | 61.7 | 58.1 |
| 15/10/2014 | 17:00:00 | 59.8 | 77.5 | 51.3 | 53.9 | 54.7 | 58.4 | 61.8 | 60.9 | 60.6 | 61.1 |
| 15/10/2014 | 17:15:00 | 62.3 | 81.9 | 51.2 | 53.7 | 57.3 | 61.3 | 62.8 | 65.1 | 64.4 | 63.1 |
| 15/10/2014 | 17:30:00 | 67.6 | 92.9 | 49.8 | 52.3 | 55.6 | 59.2 | 62.4 | 62.3 | 61.8 | 59.3 |
| 15/10/2014 | 17:45:00 | 59.3 | 79.2 | 49.7 | 53.5 | 54.5 | 58.7 | 61.3 | 60.1 | 60.8 | 57.7 |
| 15/10/2014 | 18:00:00 | 59.1 | 78.6 | 50.8 | 52.8 | 55.1 | 59.0 | 61.2 | 62.6 | 63.3 | 60.1 |
| 15/10/2014 | 18:15:00 | 58.7 | 74.2 | 49.8 | 51.4 | 53.5 | 59.4 | 61.5 | 62.2 | 62.4 | 59.5 |
| 15/10/2014 | 18:30:00 | 65.1 | 77.6 | 48.9 | 50.3 | 54.5 | 60.7 | 62.1 | 62.2 | 61.7 | 58.9 |
| 15/10/2014 | 18:45:00 | 70.3 | 76.6 | 47.4 | 49.8 | 55.4 | 58.3 | 62.0 | 62.3 | 62.1 | 58.5 |
| 15/10/2014 | 19:00:00 | 69.6 | 79.5 | 47.1 | 48.8 | 51.6 | 56.5 | 59.9 | 64.4 | 62.3 | 59.9 |
| 15/10/2014 | 19:14:00 | 64.6 | 76.4 | 49.2 | 52.2 | 54.9 | 58.2 | 61.5 | 61.0 | 60.7 | 58.3 |
| 15/10/2014 | 19:30:00 | 61.5 | 71.9 | 48.1 | 49.9 | 52.1 | 57.5 | 59.2 | 61.4 | 61.1 | 56.2 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 15/10/2014 | 19:44:00 | 57.3 | 72.6 | 48.1 | 48.7 | 52.4 | 57.5 | 59.5 | 60.0 | 60.5 | 58.4 |
| 15/10/2014 | 20:00:00 | 58.4 | 74.3 | 50.1 | 53.3 | 55.1 | 58.3 | 62.1 | 62.5 | 61.8 | 58.1 |
| 15/10/2014 | 20:15:00 | 55.0 | 71.1 | 48.9 | 49.6 | 51.7 | 56.0 | 59.2 | 60.2 | 61.1 | 54.6 |
| 15/10/2014 | 20:30:00 | 55.7 | 67.9 | 46.7 | 48.6 | 51.7 | 55.6 | 57.9 | 60.7 | 62.4 | 58.4 |
| 15/10/2014 | 20:44:00 | 56.1 | 68.8 | 46.0 | 48.4 | 50.4 | 53.2 | 55.7 | 58.5 | 60.0 | 56.7 |
| 15/10/2014 | 21:00:00 | 57.7 | 71.9 | 47.1 | 49.2 | 51.8 | 55.2 | 57.8 | 61.0 | 60.1 | 54.0 |
| 15/10/2014 | 21:14:00 | 56.6 | 75.2 | 48.7 | 48.8 | 51.4 | 55.7 | 57.7 | 59.8 | 58.8 | 57.5 |
| 15/10/2014 | 21:30:00 | 56.3 | 77.6 | 46.6 | 48.1 | 51.3 | 54.4 | 56.9 | 59.0 | 59.0 | 62.6 |
| 15/10/2014 | 21:45:00 | 56.9 | 72.0 | 50.7 | 51.2 | 54.4 | 57.5 | 57.8 | 60.7 | 60.2 | 57.2 |
| 15/10/2014 | 22:00:00 | 55.2 | 72.4 | 48.2 | 50.7 | 52.0 | 54.7 | 58.6 | 60.7 | 63.6 | 62.8 |
| 15/10/2014 | 22:15:00 | 53.4 | 66.4 | 46.8 | 48.7 | 51.2 | 54.0 | 58.4 | 59.2 | 58.9 | 53.7 |
| 15/10/2014 | 22:30:00 | 59.0 | 80.0 | 50.0 | 50.7 | 55.0 | 56.6 | 58.4 | 61.6 | 62.5 | 58.6 |
| 15/10/2014 | 22:45:00 | 66.5 | 75.9 | 45.9 | 47.5 | 53.7 | 56.0 | 62.3 | 60.2 | 59.7 | 54.0 |
| 15/10/2014 | 23:00:00 | 65.6 | 77.8 | 45.0 | 49.1 | 56.3 | 56.3 | 57.4 | 60.6 | 60.5 | 55.5 |
| 15/10/2014 | 23:15:00 | 55.6 | 79.1 | 45.3 | 46.2 | 48.4 | 57.0 | 65.2 | 54.9 | 56.1 | 52.3 |
| 15/10/2014 | 23:30:00 | 51.9 | 68.3 | 45.8 | 48.1 | 51.6 | 53.1 | 58.2 | 59.5 | 55.8 | 51.8 |
| 15/10/2014 | 23:45:00 | 66.2 | 74.8 | 43.7 | 44.7 | 46.1 | 54.4 | 62.5 | 61.8 | 59.3 | 54.8 |
| 16/10/2014 | 00:00:00 | 59.2 | 82.4 | 45.3 | 45.6 | 50.7 | 53.8 | 56.5 | 60.2 | 60.7 | 57.9 |
| 16/10/2014 | 00:15:00 | 51.4 | 72.4 | 45.9 | 49.5 | 50.4 | 52.3 | 55.3 | 57.0 | 58.8 | 49.6 |
| 16/10/2014 | 00:30:00 | 51.6 | 68.2 | 43.8 | 44.5 | 47.8 | 51.3 | 53.2 | 54.8 | 54.5 | 51.8 |
| 16/10/2014 | 00:44:00 | 49.6 | 66.3 | 42.4 | 43.7 | 45.4 | 50.3 | 56.3 | 57.3 | 57.9 | 52.1 |
| 16/10/2014 | 01:00:00 | 47.2 | 67.0 | 40.3 | 42.5 | 45.6 | 48.8 | 54.2 | 57.0 | 56.7 | 46.4 |
| 16/10/2014 | 01:15:00 | 42.4 | 68.2 | 37.0 | 38.0 | 40.6 | 42.0 | 42.2 | 43.6 | 44.7 | 37.8 |
| 16/10/2014 | 01:30:00 | 44.1 | 62.4 | 38.7 | 40.8 | 42.1 | 48.1 | 48.2 | 54.3 | 54.1 | 42.5 |
| 16/10/2014 | 01:45:00 | 48.5 | 66.9 | 40.2 | 43.5 | 45.1 | 48.0 | 50.8 | 54.4 | 53.1 | 48.4 |
| 16/10/2014 | 02:00:00 | 43.6 | 66.6 | 47.6 | 45.5 | 44.4 | 47.8 | 46.6 | 48.2 | 45.9 | 42.8 |
| 16/10/2014 | 02:15:00 | 48.0 | 68.5 | 42.9 | 42.6 | 46.2 | 48.1 | 49.5 | 49.7 | 49.1 | 48.2 |
| 16/10/2014 | 02:30:00 | 44.5 | 64.3 | 42.3 | 44.7 | 48.4 | 48.4 | 49.9 | 48.7 | 55.2 | 47.6 |
| 16/10/2014 | 02:45:00 | 43.3 | 64.5 | 40.9 | 40.0 | 42.9 | 44.3 | 51.4 | 47.5 | 46.4 | 50.2 |
| 16/10/2014 | 02:59:00 | 45.0 | 65.8 | 39.7 | 40.3 | 44.8 | 49.0 | 49.7 | 52.9 | 50.1 | 45.5 |
| 16/10/2014 | 03:15:00 | 46.2 | 69.5 | 44.3 | 43.8 | 47.7 | 49.3 | 45.4 | 44.9 | 45.0 | 39.4 |
| 16/10/2014 | 03:30:00 | 50.1 | 67.8 | 41.5 | 44.2 | 47.1 | 48.9 | 56.2 | 57.2 | 54.6 | 46.0 |
| 16/10/2014 | 03:45:00 | 45.8 | 63.9 | 38.1 | 39.7 | 42.1 | 44.0 | 44.4 | 49.3 | 50.6 | 42.2 |
| 16/10/2014 | 04:00:00 | 41.4 | 54.8 | 42.4 | 43.7 | 44.5 | 52.7 | 46.7 | 43.6 | 44.3 | 40.9 |
| 16/10/2014 | 04:15:00 | 45.0 | 64.9 | 45.4 | 49.5 | 47.2 | 53.9 | 49.5 | 56.6 | 48.7 | 44.3 |
| 16/10/2014 | 04:30:00 | 46.9 | 64.7 | 40.2 | 42.0 | 44.1 | 53.8 | 47.1 | 50.6 | 54.6 | 51.7 |
| 16/10/2014 | 04:45:00 | 43.4 | 60.8 | 39.9 | 41.2 | 43.2 | 53.7 | 48.3 | 46.4 | 50.3 | 42.4 |
| 16/10/2014 | 05:00:00 | 43.1 | 65.3 | 39.4 | 40.0 | 42.8 | 53.3 | 52.1 | 48.2 | 44.3 | 41.0 |
| 16/10/2014 | 05:14:00 | 45.7 | 63.1 | 42.5 | 43.5 | 45.4 | 53.7 | 51.4 | 52.5 | 53.9 | 49.4 |
| 16/10/2014 | 05:30:00 | 44.9 | 66.6 | 43.5 | 43.2 | 44.7 | 53.7 | 48.4 | 49.8 | 50.5 | 44.3 |
| 16/10/2014 | 05:45:00 | 47.2 | 64.8 | 43.7 | 44.0 | 46.3 | 52.8 | 49.2 | 50.2 | 49.9 | 45.7 |
| 16/10/2014 | 05:59:00 | 49.6 | 67.2 | 45.5 | 45.3 | 48.3 | 51.9 | 52.3 | 54.1 | 54.0 | 54.4 |
| 16/10/2014 | 06:15:00 | 52.6 | 69.8 | 46.7 | 50.8 | 49.6 | 55.0 | 55.9 | 58.6 | 59.4 | 57.0 |
| 16/10/2014 | 06:30:00 | 50.9 | 67.5 | 46.0 | 46.5 | 48.4 | 51.3 | 53.2 | 56.6 | 59.0 | 55.3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 16/10/2014 | 06:44:00 | 52.0 | 72.4 | 49.4 | 52.2 | 51.9 | 53.7 | 56.0 | 59.9 | 59.5 | 54.2 |
| 16/10/2014 | 07:00:00 | 56.1 | 70.8 | 49.9 | 51.1 | 52.8 | 56.3 | 58.6 | 61.2 | 60.3 | 57.8 |
| 16/10/2014 | 07:15:00 | 54.7 | 70.6 | 49.9 | 52.5 | 54.9 | 57.2 | 59.0 | 60.9 | 60.3 | 58.6 |
| 16/10/2014 | 07:30:00 | 57.7 | 71.6 | 50.0 | 52.3 | 54.3 | 57.8 | 61.2 | 62.7 | 61.7 | 58.4 |
| 16/10/2014 | 07:45:00 | 57.3 | 71.1 | 51.0 | 54.3 | 54.8 | 62.4 | 63.4 | 63.3 | 61.8 | 58.7 |
| 16/10/2014 | 08:00:00 | 60.0 | 76.7 | 51.7 | 54.8 | 55.3 | 59.9 | 64.7 | 67.3 | 66.3 | 62.1 |
| 16/10/2014 | 08:15:00 | 60.2 | 76.0 | 54.0 | 55.9 | 57.2 | 60.6 | 62.8 | 65.0 | 65.6 | 60.1 |
| 16/10/2014 | 08:30:00 | 60.8 | 84.1 | 53.2 | 55.5 | 57.1 | 63.3 | 67.7 | 66.2 | 66.4 | 62.1 |
| 16/10/2014 | 08:45:00 | 61.2 | 78.2 | 51.4 | 53.5 | 57.0 | 60.9 | 64.6 | 66.0 | 66.3 | 61.9 |
| 16/10/2014 | 09:00:00 | 60.2 | 76.9 | 55.5 | 58.7 | 59.8 | 66.9 | 66.4 | 65.2 | 64.3 | 59.2 |
| 16/10/2014 | 09:15:00 | 60.5 | 78.2 | 54.2 | 56.4 | 58.9 | 61.0 | 63.7 | 63.2 | 61.3 | 58.5 |
| 16/10/2014 | 09:29:00 | 59.3 | 77.5 | 52.5 | 54.9 | 57.7 | 60.5 | 64.3 | 67.3 | 65.3 | 60.0 |
| 16/10/2014 | 09:45:00 | 59.5 | 77.9 | 52.2 | 54.9 | 57.9 | 59.5 | 62.5 | 63.7 | 63.1 | 60.8 |
| 16/10/2014 | 10:00:00 | 59.4 | 81.3 | 50.2 | 52.8 | 54.8 | 57.9 | 61.8 | 65.5 | 62.8 | 58.2 |
| 16/10/2014 | 10:15:00 | 59.0 | 77.2 | 50.1 | 52.8 | 54.8 | 58.0 | 62.0 | 62.1 | 61.3 | 57.8 |
| 16/10/2014 | 10:30:00 | 60.4 | 77.5 | 52.2 | 54.3 | 57.3 | 60.9 | 63.8 | 64.3 | 63.4 | 61.0 |
| 16/10/2014 | 10:45:00 | 58.8 | 77.7 | 52.2 | 55.0 | 57.2 | 59.6 | 62.0 | 60.5 | 61.2 | 58.0 |
| 16/10/2014 | 10:59:00 | 59.9 | 77.8 | 51.2 | 53.3 | 55.1 | 57.3 | 60.8 | 62.3 | 61.8 | 57.9 |
| 16/10/2014 | 11:15:00 | 58.7 | 78.1 | 51.4 | 54.0 | 57.3 | 58.3 | 60.7 | 61.9 | 62.4 | 60.0 |
| 16/10/2014 | 11:30:00 | 58.8 | 77.9 | 52.0 | 53.9 | 56.5 | 58.0 | 61.2 | 60.5 | 59.5 | 56.2 |
| 16/10/2014 | 11:45:00 | 60.6 | 77.4 | 53.3 | 55.2 | 57.7 | 60.9 | 64.0 | 64.5 | 64.6 | 61.3 |
| 16/10/2014 | 12:00:00 | 61.7 | 77.9 | 54.1 | 55.8 | 57.7 | 60.3 | 64.8 | 66.0 | 66.3 | 62.0 |
| 16/10/2014 | 12:15:00 | 59.5 | 77.4 | 52.3 | 53.1 | 56.0 | 59.7 | 61.9 | 62.1 | 62.8 | 60.3 |
| 16/10/2014 | 12:30:00 | 59.0 | 78.2 | 53.5 | 54.6 | 57.0 | 63.2 | 64.3 | 65.7 | 64.4 | 57.7 |
| 16/10/2014 | 12:44:00 | 60.0 | 77.4 | 53.0 | 55.3 | 57.5 | 59.8 | 63.2 | 63.8 | 63.1 | 59.4 |
| 16/10/2014 | 13:00:00 | 62.1 | 80.0 | 53.5 | 55.6 | 58.0 | 68.8 | 63.2 | 63.8 | 63.0 | 58.7 |
| 16/10/2014 | 13:15:00 | 60.6 | 78.1 | 51.7 | 53.9 | 56.9 | 58.7 | 61.3 | 63.0 | 62.9 | 58.8 |
| 16/10/2014 | 13:30:00 | 58.3 | 77.1 | 54.1 | 54.9 | 57.1 | 60.9 | 62.7 | 63.3 | 63.6 | 59.2 |
| 16/10/2014 | 13:45:00 | 59.3 | 77.2 | 48.9 | 51.0 | 54.1 | 58.3 | 61.5 | 62.0 | 62.5 | 58.7 |
| 16/10/2014 | 14:00:00 | 61.0 | 77.4 | 51.9 | 53.6 | 55.8 | 58.5 | 61.5 | 62.4 | 61.9 | 57.8 |
| 16/10/2014 | 14:14:00 | 61.2 | 77.5 | 54.3 | 55.6 | 56.9 | 60.0 | 63.4 | 64.3 | 63.1 | 63.1 |
| 16/10/2014 | 14:30:00 | 62.5 | 78.6 | 53.0 | 54.1 | 55.9 | 58.7 | 62.9 | 63.8 | 62.9 | 59.4 |
| 16/10/2014 | 14:45:00 | 67.0 | 85.5 | 52.9 | 56.3 | 57.1 | 60.9 | 64.0 | 65.5 | 63.6 | 58.8 |
| 16/10/2014 | 15:00:00 | 67.8 | 78.8 | 51.8 | 54.0 | 58.6 | 60.4 | 61.8 | 65.0 | 63.2 | 61.1 |
| 16/10/2014 | 15:15:00 | 58.5 | 77.3 | 52.4 | 55.4 | 59.3 | 64.1 | 69.3 | 62.5 | 61.7 | 59.6 |
| 16/10/2014 | 15:29:00 | 58.6 | 77.2 | 53.0 | 55.7 | 62.2 | 59.9 | 62.7 | 63.6 | 63.8 | 58.3 |
| 16/10/2014 | 15:45:00 | 60.0 | 77.4 | 51.3 | 54.4 | 57.2 | 62.8 | 63.0 | 64.2 | 64.7 | 62.1 |
| 16/10/2014 | 16:00:00 | 60.7 | 84.4 | 50.9 | 51.9 | 54.0 | 60.4 | 59.8 | 61.6 | 62.0 | 60.3 |
| 16/10/2014 | 16:15:00 | 61.6 | 83.1 | 54.0 | 56.2 | 57.5 | 63.9 | 63.9 | 64.1 | 64.7 | 62.3 |
| 16/10/2014 | 16:30:00 | 59.7 | 78.2 | 51.3 | 53.8 | 57.1 | 62.9 | 62.6 | 63.4 | 63.4 | 60.0 |
| 16/10/2014 | 16:45:00 | 58.5 | 77.5 | 53.0 | 52.9 | 56.0 | 57.1 | 61.8 | 59.9 | 60.1 | 59.3 |
| 16/10/2014 | 17:00:00 | 59.3 | 78.4 | 53.3 | 54.5 | 58.2 | 57.7 | 59.8 | 62.5 | 61.3 | 57.0 |
| 16/10/2014 | 17:15:00 | 59.9 | 81.3 | 50.5 | 53.0 | 55.3 | 59.1 | 60.9 | 60.8 | 60.7 | 57.9 |
| 16/10/2014 | 17:30:00 | 57.1 | 73.9 | 51.5 | 54.0 | 56.0 | 58.6 | 61.9 | 63.4 | 63.9 | 59.3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 16/10/2014 | 17:45:00 | 57.6 | 76.3 | 49.5 | 51.2 | 53.6 | 58.3 | 59.7 | 62.5 | 61.6 | 58.8 |
| 16/10/2014 | 18:00:00 | 55.4 | 75.2 | 50.7 | 52.6 | 55.6 | 60.2 | 61.6 | 60.2 | 58.2 | 55.4 |
| 16/10/2014 | 18:14:00 | 57.0 | 74.6 | 50.2 | 50.8 | 54.1 | 59.1 | 62.2 | 63.0 | 61.2 | 59.1 |
| 16/10/2014 | 18:30:00 | 56.2 | 73.0 | 49.1 | 50.6 | 52.6 | 56.6 | 58.7 | 62.3 | 62.3 | 57.6 |
| 16/10/2014 | 18:45:00 | 56.5 | 75.0 | 49.5 | 53.3 | 58.0 | 60.1 | 63.4 | 65.8 | 63.3 | 60.1 |
| 16/10/2014 | 19:00:00 | 55.4 | 69.9 | 50.6 | 54.0 | 57.0 | 59.9 | 60.2 | 60.0 | 59.7 | 58.3 |
| 16/10/2014 | 19:15:00 | 55.7 | 69.9 | 48.3 | 50.1 | 51.9 | 56.3 | 57.5 | 58.4 | 60.8 | 61.2 |
| 16/10/2014 | 19:30:00 | 54.8 | 73.5 | 48.5 | 49.9 | 55.1 | 57.5 | 59.7 | 60.5 | 63.3 | 59.7 |
| 16/10/2014 | 19:44:00 | 55.3 | 71.0 | 50.3 | 51.1 | 53.3 | 56.3 | 59.0 | 60.9 | 60.2 | 57.7 |
| 16/10/2014 | 20:00:00 | 54.5 | 70.4 | 48.3 | 51.0 | 54.0 | 57.7 | 59.2 | 61.1 | 62.0 | 57.2 |
| 16/10/2014 | 20:14:00 | 54.7 | 73.6 | 47.3 | 48.3 | 52.0 | 54.7 | 57.5 | 62.5 | 60.0 | 54.4 |
| 16/10/2014 | 20:30:00 | 54.2 | 70.6 | 49.3 | 51.8 | 53.0 | 54.5 | 55.8 | 57.7 | 60.4 | 57.7 |
| 16/10/2014 | 20:45:00 | 54.6 | 70.7 | 46.6 | 47.1 | 50.7 | 54.3 | 56.0 | 55.8 | 59.3 | 55.1 |
| 16/10/2014 | 21:00:00 | 54.1 | 72.6 | 47.7 | 48.5 | 52.2 | 56.0 | 59.2 | 61.4 | 60.1 | 57.5 |
| 16/10/2014 | 21:15:00 | 53.3 | 70.3 | 45.8 | 47.3 | 52.5 | 53.8 | 57.0 | 59.6 | 60.9 | 56.2 |
| 16/10/2014 | 21:30:00 | 54.3 | 73.5 | 46.5 | 47.5 | 51.1 | 55.2 | 57.3 | 57.0 | 57.2 | 56.9 |
| 16/10/2014 | 21:45:00 | 53.4 | 67.9 | 46.3 | 48.1 | 52.6 | 53.5 | 57.7 | 61.1 | 59.8 | 55.1 |
| 16/10/2014 | 22:00:00 | 54.1 | 73.3 | 45.3 | 47.0 | 50.7 | 53.2 | 59.6 | 61.0 | 59.6 | 54.4 |
| 16/10/2014 | 22:15:00 | 52.9 | 69.2 | 46.7 | 48.2 | 50.6 | 53.8 | 55.7 | 57.9 | 59.3 | 55.1 |
| 16/10/2014 | 22:30:00 | 51.6 | 66.7 | 45.8 | 47.1 | 49.5 | 55.6 | 54.0 | 56.7 | 56.7 | 53.0 |
| 16/10/2014 | 22:45:00 | 53.8 | 70.0 | 47.0 | 54.5 | 58.4 | 53.6 | 58.7 | 60.1 | 55.8 | 52.0 |
| 16/10/2014 | 23:00:00 | 54.1 | 76.1 | 45.5 | 46.5 | 52.0 | 56.2 | 60.4 | 62.3 | 58.9 | 53.7 |
| 16/10/2014 | 23:15:00 | 53.5 | 69.9 | 45.6 | 47.7 | 51.3 | 53.8 | 56.8 | 57.6 | 57.8 | 53.1 |
| 16/10/2014 | 23:30:00 | 53.0 | 73.5 | 46.2 | 46.6 | 54.5 | 58.0 | 58.5 | 61.0 | 60.4 | 55.3 |
| 16/10/2014 | 23:45:00 | 52.0 | 70.3 | 44.2 | 44.8 | 48.6 | 53.2 | 56.9 | 55.3 | 53.9 | 49.9 |
| 17/10/2014 | 00:00:00 | 54.7 | 71.6 | 45.5 | 46.7 | 47.7 | 51.1 | 54.8 | 57.1 | 57.8 | 53.0 |
| 17/10/2014 | 00:15:00 | 55.0 | 70.1 | 49.0 | 50.4 | 51.2 | 53.1 | 56.1 | 58.8 | 55.8 | 49.1 |
| 17/10/2014 | 00:30:00 | 53.0 | 67.2 | 43.6 | 45.8 | 51.3 | 53.6 | 56.2 | 55.6 | 57.9 | 53.8 |
| 17/10/2014 | 00:45:00 | 50.2 | 67.6 | 45.5 | 44.0 | 44.9 | 48.2 | 49.3 | 48.1 | 48.2 | 44.4 |
| 17/10/2014 | 01:00:00 | 49.2 | 65.3 | 40.9 | 41.8 | 44.2 | 47.6 | 51.5 | 57.3 | 54.9 | 49.3 |
| 17/10/2014 | 01:15:00 | 49.2 | 66.5 | 42.3 | 42.4 | 45.8 | 47.4 | 49.1 | 54.0 | 55.4 | 47.8 |
| 17/10/2014 | 01:30:00 | 46.7 | 65.3 | 39.1 | 40.7 | 43.3 | 44.7 | 46.7 | 48.3 | 52.6 | 46.1 |
| 17/10/2014 | 01:45:00 | 44.7 | 62.9 | 39.5 | 40.3 | 43.8 | 47.3 | 45.6 | 44.9 | 46.5 | 42.2 |
| 17/10/2014 | 02:00:00 | 45.8 | 65.8 | 41.0 | 42.6 | 44.5 | 48.6 | 46.6 | 48.8 | 52.4 | 49.3 |
| 17/10/2014 | 02:14:00 | 47.1 | 64.9 | 46.0 | 49.9 | 47.1 | 48.0 | 48.8 | 49.6 | 48.5 | 49.3 |
| 17/10/2014 | 02:30:00 | 46.1 | 64.9 | 41.2 | 44.8 | 47.3 | 46.7 | 45.8 | 46.4 | 48.6 | 49.4 |
| 17/10/2014 | 02:45:00 | 46.1 | 64.9 | 41.4 | 42.6 | 45.9 | 48.1 | 47.4 | 48.0 | 48.8 | 43.5 |
| 17/10/2014 | 03:00:00 | 46.0 | 62.4 | 40.4 | 42.2 | 44.9 | 50.2 | 51.4 | 52.0 | 56.7 | 53.3 |
| 17/10/2014 | 03:15:00 | 44.2 | 59.8 | 44.6 | 44.4 | 48.6 | 47.8 | 46.0 | 44.5 | 44.7 | 42.5 |
| 17/10/2014 | 03:30:00 | 45.3 | 63.4 | 40.3 | 41.4 | 45.2 | 47.0 | 54.0 | 53.6 | 50.0 | 45.0 |
| 17/10/2014 | 03:45:00 | 44.8 | 64.5 | 39.8 | 40.8 | 43.3 | 44.9 | 45.7 | 48.0 | 51.9 | 43.8 |
| 17/10/2014 | 04:00:00 | 46.0 | 63.0 | 44.4 | 46.5 | 46.1 | 48.1 | 54.2 | 58.7 | 48.8 | 46.5 |
| 17/10/2014 | 04:15:00 | 49.3 | 70.1 | 40.9 | 41.9 | 45.2 | 47.9 | 47.9 | 52.6 | 51.9 | 48.7 |
| 17/10/2014 | 04:30:00 | 47.4 | 65.4 | 41.1 | 42.4 | 45.9 | 49.9 | 48.9 | 52.9 | 53.0 | 43.9 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17/10/2014 | 04:45:00 | 52.8 | 71.0 | 41.4 | 45.5 | 61.7 | 59.7 | 51.0 | 54.0 | 56.4 | 54.1 |
| 17/10/2014 | 05:00:00 | 47.2 | 66.5 | 40.5 | 41.8 | 43.5 | 46.8 | 48.2 | 50.2 | 57.0 | 53.1 |
| 17/10/2014 | 05:15:00 | 48.3 | 65.7 | 43.3 | 44.2 | 45.6 | 47.4 | 49.1 | 54.6 | 55.8 | 46.0 |
| 17/10/2014 | 05:30:00 | 47.8 | 65.1 | 44.7 | 44.8 | 46.1 | 49.8 | 49.7 | 51.8 | 52.6 | 51.9 |
| 17/10/2014 | 05:45:00 | 47.1 | 66.7 | 44.6 | 45.5 | 46.7 | 50.5 | 50.3 | 47.5 | 47.4 | 46.7 |
| 17/10/2014 | 06:00:00 | 49.4 | 66.5 | 45.6 | 45.8 | 48.1 | 49.2 | 51.6 | 52.8 | 52.1 | 49.7 |
| 17/10/2014 | 06:15:00 | 48.7 | 64.6 | 45.0 | 45.7 | 46.8 | 49.6 | 52.4 | 55.3 | 54.3 | 52.0 |
| 17/10/2014 | 06:30:00 | 51.2 | 67.8 | 45.8 | 46.6 | 48.7 | 53.1 | 56.7 | 56.2 | 52.9 | 50.7 |
| 17/10/2014 | 06:45:00 | 54.7 | 74.5 | 47.3 | 49.0 | 52.6 | 55.5 | 58.7 | 59.9 | 61.9 | 56.3 |
| 17/10/2014 | 07:00:00 | 54.6 | 69.1 | 48.1 | 51.1 | 54.1 | 59.8 | 60.3 | 63.0 | 61.1 | 57.4 |
| 17/10/2014 | 07:15:00 | 56.7 | 70.5 | 49.0 | 51.7 | 53.7 | 57.2 | 60.4 | 62.7 | 60.5 | 56.9 |
| 17/10/2014 | 07:30:00 | 56.2 | 70.6 | 48.7 | 50.8 | 53.7 | 58.7 | 61.7 | 62.6 | 61.3 | 59.3 |
| 17/10/2014 | 07:44:00 | 58.9 | 75.9 | 50.7 | 54.9 | 57.0 | 70.2 | 64.1 | 63.7 | 67.9 | 62.4 |
| 17/10/2014 | 08:00:00 | 59.1 | 75.8 | 49.6 | 52.8 | 55.1 | 63.7 | 63.7 | 62.2 | 63.5 | 59.4 |
| 17/10/2014 | 08:15:00 | 60.1 | 76.5 | 55.0 | 56.6 | 58.2 | 61.7 | 63.2 | 65.3 | 64.7 | 61.7 |
| 17/10/2014 | 08:30:00 | 59.2 | 77.4 | 50.2 | 53.0 | 56.7 | 61.7 | 61.9 | 63.1 | 62.6 | 59.3 |
| 17/10/2014 | 08:45:00 | 59.1 | 77.4 | 50.5 | 53.7 | 58.4 | 60.5 | 64.2 | 64.9 | 64.8 | 61.0 |
| 17/10/2014 | 09:00:00 | 59.3 | 77.6 | 50.6 | 52.3 | 56.0 | 61.7 | 64.0 | 65.2 | 65.4 | 60.6 |
| 17/10/2014 | 09:15:00 | 59.5 | 81.2 | 51.1 | 55.1 | 58.1 | 60.5 | 65.3 | 63.2 | 62.0 | 58.2 |
| 17/10/2014 | 09:30:00 | 58.7 | 78.2 | 52.1 | 53.6 | 57.1 | 60.3 | 64.5 | 66.0 | 64.0 | 60.3 |
| 17/10/2014 | 09:44:00 | 59.3 | 77.5 | 51.5 | 55.7 | 58.3 | 59.9 | 61.7 | 63.0 | 63.9 | 59.2 |
| 17/10/2014 | 10:00:00 | 59.3 | 77.7 | 51.5 | 54.0 | 56.8 | 61.6 | 63.9 | 63.9 | 63.9 | 60.3 |
| 17/10/2014 | 10:15:00 | 60.2 | 78.3 | 54.4 | 56.6 | 57.7 | 59.7 | 61.7 | 61.5 | 64.2 | 61.4 |
| 17/10/2014 | 10:29:00 | 61.0 | 79.1 | 54.4 | 56.5 | 57.4 | 62.8 | 62.5 | 62.9 | 65.2 | 60.1 |
| 17/10/2014 | 10:45:00 | 58.3 | 77.6 | 53.4 | 54.0 | 56.9 | 59.2 | 60.3 | 61.2 | 60.2 | 56.9 |
| 17/10/2014 | 10:59:00 | 58.8 | 78.0 | 57.1 | 56.7 | 57.7 | 60.4 | 61.1 | 60.2 | 59.6 | 56.7 |
| 17/10/2014 | 11:15:00 | 59.2 | 78.1 | 52.2 | 55.0 | 58.8 | 60.7 | 62.8 | 64.7 | 62.5 | 58.8 |
| 17/10/2014 | 11:30:00 | 58.6 | 78.5 | 54.4 | 56.1 | 56.0 | 61.4 | 61.2 | 62.4 | 61.6 | 56.6 |
| 17/10/2014 | 11:45:00 | 58.5 | 77.0 | 53.8 | 53.6 | 56.9 | 60.3 | 63.5 | 64.9 | 61.8 | 58.1 |
| 17/10/2014 | 12:00:00 | 59.5 | 77.8 | 54.4 | 54.8 | 56.7 | 59.7 | 61.8 | 64.6 | 63.3 | 58.3 |
| 17/10/2014 | 12:15:00 | 59.6 | 77.3 | 55.2 | 55.3 | 56.9 | 59.5 | 62.5 | 65.8 | 66.7 | 62.7 |
| 17/10/2014 | 12:29:00 | 58.3 | 77.0 | 57.4 | 57.0 | 57.3 | 58.7 | 60.7 | 63.6 | 63.2 | 58.6 |
| 17/10/2014 | 12:45:00 | 60.1 | 77.5 | 55.4 | 57.1 | 58.5 | 60.8 | 61.3 | 62.8 | 66.5 | 60.4 |
| 17/10/2014 | 13:00:00 | 58.9 | 77.7 | 57.5 | 57.1 | 58.0 | 62.7 | 64.4 | 64.5 | 62.2 | 58.5 |
| 17/10/2014 | 13:15:00 | 59.4 | 77.4 | 57.1 | 56.9 | 58.1 | 59.6 | 62.7 | 61.9 | 62.0 | 59.8 |
| 17/10/2014 | 13:30:00 | 59.2 | 78.0 | 55.7 | 56.1 | 57.9 | 59.6 | 63.2 | 63.6 | 62.0 | 60.7 |
| 17/10/2014 | 13:44:00 | 57.6 | 71.1 | 53.1 | 52.8 | 55.2 | 58.5 | 60.3 | 62.8 | 61.5 | 55.7 |

## APPENDIX G: GLOSSARY OF ACOUSTIC TERMS

DECIBEL (dB) - A unit of sound pressure measurement
Sound Pressure Level in dB (*L*p) = 20 log (Measured sound pressure/Reference sound pressure = 20 µPa)

dB(A) - The A -weighted sound pressure level, the weighting network reduces low frequency sound in a similar way to the human ear.

REVERBERATION TIME (RT or *T*) – decay of sound in rooms
The time taken for a sound, once terminated, to fall through 60dB i.e. to one millionth of its original sound intensity. *T*30 – RT for first 30dB of decay. $RT_{500}$ - Mid frequency RT.

HERTZ (Hz) - a unit of frequency measurement. The normal range of hearing is from 20Hz to about 15kHz.

ABSORPTION COEFFICIENT – degree to which a material absorbs sound.
The ratio of absorbed to incident sound energy (perfect absorber = 1)

SOUND REDUCTION INDEX *R* – quantity which describes a material's ability to reduce the sound pressure level across it (e.g. a wall or floor)

$R = L1 - L2 + 10\log (S/A)$

*L*1 - Average sound pressure level in source room (averaged from 100 Hz – 3150 Hz)
*L*2 - Average sound pressure level in receiving room (averaged from 100 Hz – 3150 Hz)
*S* – Wall Area ($m^2$)
*A* – Total absorption in receiving room ($m^2$ units)

*R*w – weighted sound reduction index

AVERAGE ROOM TO ROOM LEVEL DIFFERENCE – *D*, dB = *L*1 – *L*2, averaged 1/3 octave bands from 100Hz – 3150kHz.

*D*w – weighted value of D (usually 2 - 3dB higher)

*D*nT, w – *D*w corrected for reverberation time of receiving room

NOISE RATING CURVES (NR CURVES) – set of curves used to describe optimum background noise levels for different tasks.

*L*10/90 LEVEL (dB) - The level in dB of a time varying sound pressured level (e.g. traffic) exceeded for 10%/90% of the time of measurement.
*L*90 is usually called the BACKGROUND NOISE LEVEL.

*L*eq AVERAGE SOUND PRESSURE LEVEL – level dB of a time varying sound pressure level with equal amounts of energy above and below it, for the time of measurement.

TONAL NOISE – noise of a single frequency (or a narrow band of frequencies that can be perceived as a tone), audible above the broad band noise background. Noise which is at least 5dB above the average of the 1/3 octave band sound pressure levels immediately on either side of it.