



# Residential research report: The Impact of On-Shore Gas Exploration Activities on Local House Prices.

Report prepared for: North West Energy Taskforce

March 2015



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# 1 Introduction

JLL have been instructed to analyse the likely impact of onshore gas operations on local house prices. Two onshore gas sites have been used for this analysis. These sites are located at Preese Hall, Weeton, Lancashire, PR4 3HT and Roseacre Road, Nr Elswick, Lancashire, PR4 3XD. For the purpose of this report, the two subject sites will be called “Preese Hall” and “Elswick”. It should also be noted that this has been a desktop exercise and no site visits were undertaken for this research.

The application was submitted on 2<sup>nd</sup> November 1992, was granted on 27th January 1993 and onshore gas operations commenced shortly after this.

## 1.1 Methodology

This analysis has used Land Registry data to collate all sales transactions that have taken place within the local area of the subject sites between January 1995 and December 2014. Using Geographic Information Systems (GIS), all transactions within a three mile radius of the onshore gas operations have been included. Initially a 1.5 mile radius was used for this analysis, however this was extended to a three mile radius for the following reasons:

- Preese Hall – as 48% of households are privately rented within a 1.5 mile radius, there was a limited sample size to give a fair reflection of average values. This can partly be explained by the presence of Weeton Barracks, where army personnel generally rent accommodation rather than buy as they are only based in the local area for a short period of time.
- Elswick – the lack of annual transactions within a 1.5 mile radius led to a small sample size, which is very sensitive to price variation. When the radius was extended to three miles, particular high-end transactions were removed to ensure that average prices were not skewed. An average value was calculated without these particular high value transactions, and it was concluded that prices that were more than double the new average would be removed.

Using a three mile radius, average house prices were calculated for these two areas and compared with average prices for Lancashire and the North West.

Socio demographic data for both these locations were collated so that we can deliver a broad overview of local demographics and local market dynamics.



## 2 Executive Summary

### Site details - important dates

	Application submitted	Permission granted	Permission implemented
Preese Hall	31 <sup>st</sup> July 2009	5 <sup>th</sup> May 2010	28 <sup>th</sup> March 2011
Elswick	2 <sup>nd</sup> November 1992	3 <sup>th</sup> February 1993	9 <sup>th</sup> June 1993

### Preese Hall

- From 1995 to 2014, Preese Hall has seen a higher trajectory of house price growth when compared with Lancashire and the North West.
- Although Preese Hall saw a larger decline in house prices between the application being submitted and implementation than Lancashire and the North West, the area has seen a price growth of 7.5% between onshore gas operations commencing in 2011 and 2014. This compares with the North West seeing a prices increase by 0.2% whereas Lancashire saw a price decline of 4.2%. Taken together, there is no clear evidence based on this data to suggest that onshore gas operations have had a material impact on local house prices.
- 34% of households within three mile of the subject site fall into the category of Affluent Achievers. A further indication of the prosperity in the area is that 71% of households are owner/occupied.

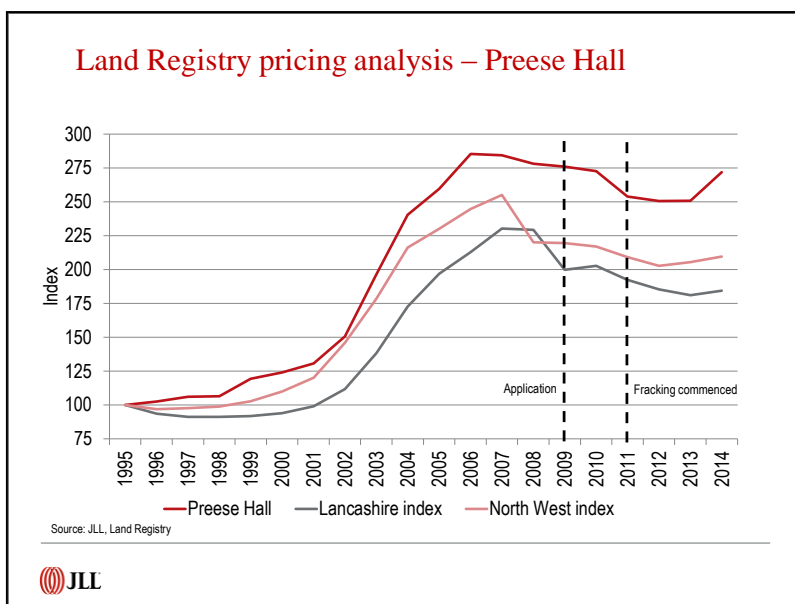
### Elswick

- Elswick has seen a higher rate of house price growth between 1995 and 2014 when compared with Lancashire and the North West.
- Between 1995 and the beginning of the peak in 2007, Elswick house prices increased by 221% - significantly above the North West and England & Wales at 130% and 155% respectively.
- 66% of households within one mile radius of the subject site consist of Affluent Achievers. The prosperity of the area sits in close vicinity to the subject site, dissipating when a larger catchment area is taken into consideration.
- 87% of households are owner/occupied – notably higher than the North West and Great Britain at 65% and 64% respectively.

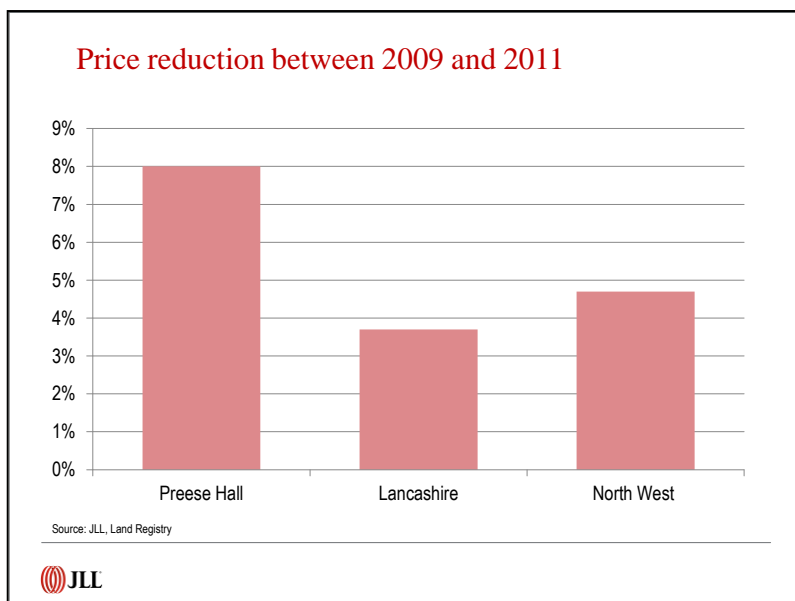
### 3 Housing market analysis

#### 3.1 Preese Hall

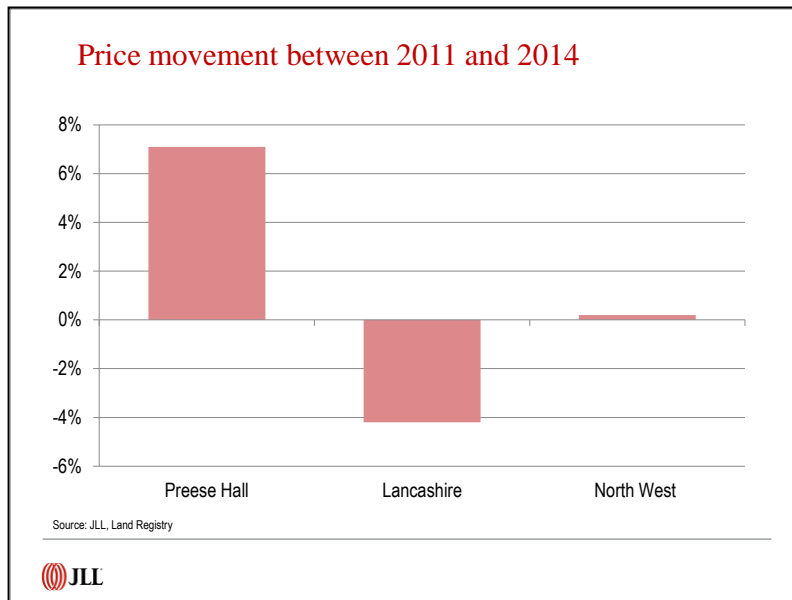
To ascertain a further understanding of the implications of onshore gas operations to local house prices, an analysis of Land Registry data within three miles of Preese Hall has been undertaken and compared with house price movement in Lancashire and the North West. The onshore gas operations planning application was submitted on 31<sup>st</sup> July 2009, was granted on 5<sup>th</sup> May 2010 and exploration works commenced on site in March 2011.



As can be seen from the graph above, Preese Hall has seen a higher trajectory of house price growth between 1995 and 2006 at 185%. This sits above the growth seen in Lancashire and the North West at 113% and 145% respectively. From 2006, house prices around Preese Hall levelled out and started to decline. This was ahead of the economic downturn which had a material effect on house prices across the UK from 2008-2009 until mid-2013.



Since the onshore gas operations application was submitted in 2009 and when exploration activities commenced on site in 2011, there was an 8.0% decline in prices around the subject site. This is higher than the price decline seen in Lancashire (3.7%) and the North West (4.7%), however house prices around Preese Hall did not fall as drastically before the onshore gas operations planning application was submitted as seen in both Lancashire and the North West. When comparing each housing market price peak with the commencement of the exploration site, Preese Hall fell by 12.4% whereas Lancashire fell by 19.7% and the North West fell by 22.0%. Taken together, there is no clear evidence based on this data to suggest that onshore gas operations has had a material impact on local house prices.

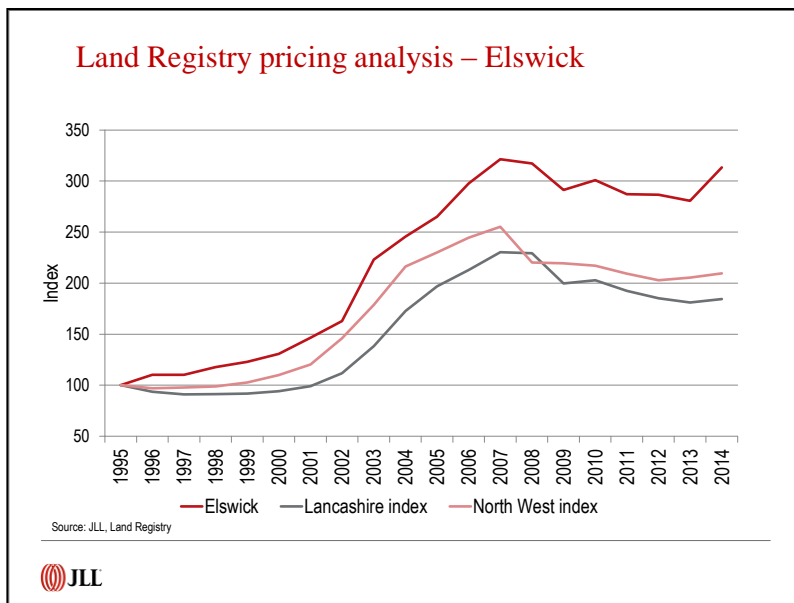


Furthermore since the on-shore gas exploration began in 2011 to 2014, there has been price growth of 7.1% around the subject site, whereas the North West have seen a price increase of 0.2% and Lancashire has seen a price decline of 4.2%.

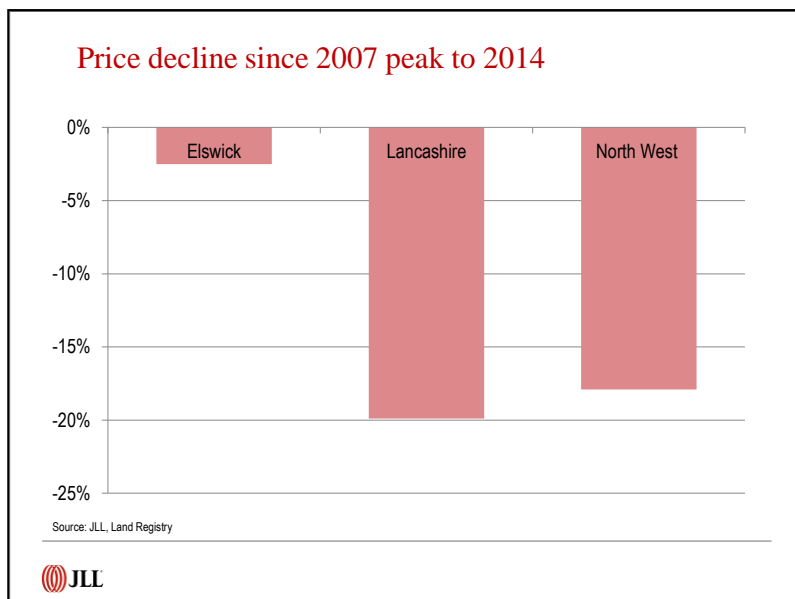
### 3.2 Elswick

A similar analysis of the onshore gas operations on site at Elswick has been undertaken. The application was submitted on 2<sup>nd</sup> November 1992, was granted on 27<sup>th</sup> January 1993 and onshore gas operations commenced in June 1993. The purpose of this analysis is to ascertain whether onshore gas operations had any material effect on local house prices, however it should be noted that Land Registry data is unavailable pre-1995. House prices will be compared with average house prices for Lancashire and the North West.

On the few occasions across the 19 years that have been analysed, there have been a limited number of transactions that were considerably above the average house price and therefore gave an unfair reflection of the average house price around the subject site. To ensure we were giving an accurate picture of the market, these high value transactions have been removed. An average value was calculated without these particular transactions, and it was concluded that values that were more than double the new average would be removed.



The graph above highlights that house prices across all three areas have shown a similar pattern of growth, highlighting that they all share the underlying fundamentals that affect house price change. Elswick has seen a higher rate of growth. Between 1995 and the beginning of the peak in 2007, Elswick house prices increased by 221% - significantly above the proportions for Lancashire and the North West at 130% and 155% respectively. After this peak, all markets have gradually declined since then, with Elswick reporting a decline of 2.5%, Lancashire seeing a price drop of 19.9% and the North West seeing a price fall of 17.9%



### 3.3 Data

To give an indication of the size and robustness of datasets used for this analysis, the table below shows the annual number of transactions used for Preese Hall, Elswick, Lancashire and the North West. The sharp fall in transaction levels in 2007-2008 is something that was mirrored nationally due to the global economic crisis and should not be taken into consideration when analysing the ramifications of onshore gas operations to house prices and transaction levels.

Annual transactions	Preese Hall	Elswick	Lancashire	North West
1995	529	91	17,534	94,997
1996	560	188	19,251	108,065
1997	659	232	22,655	120,828
1998	616	235	22,457	120,709
1999	775	244	23,502	131,462
2000	767	238	24,795	132,034
2001	887	264	27,820	141,904
2002	822	268	32,350	163,547
2003	872	214	31,013	160,832
2004	860	218	30,188	156,801
2005	597	149	25,108	129,716
2006	832	217	30,341	158,392
2007	751	243	28,181	154,791
2008	398	140	13,696	76,632
2009	312	139	12,756	66,525
2010	328	117	13,269	70,282
2011	335	152	13,201	70,861
2012	357	118	12,823	69,300
2013	407	161	15,175	84,430
2014	439	122	19,703	93,258

Source: JLL, Land Registry



## 4 Demographic Analysis

### 4.1 Preese Hall

This section considers the demographic profile of Preese Hall. We have collated data from a one mile radius around the subject site. However, the dataset is slightly skewed due to Weeton Barracks accounting for the majority of households within the catchment area. To give a clearer understanding of the local market, we have compared the demographics within a three mile radius of the subject site with the North West and with Great Britain. We have included the data for the one mile radius for reference purposes only.

### 4.2 Acorn analysis – Preese Hall

CACI Acorn analysis of households is a useful way to understand the demographics of an area. The definitions of the Acorn groupings used are provided overleaf.

The predominant Acorn group within a three mile radius of the subject site is Affluent Achievers, accounting for 34% of households. These are some of the most financially successful people in the UK. They live in wealthy, high status rural, semi-rural and suburban areas of the country. Middle aged or older people, the 'baby-boomer' generation, predominate with many empty nesters and wealthy retired. The proportion in Preese Hall sits above the proportions for both the North West, and Great Britain at 23% and 22% respectively. This highlights the prosperity of the area.

The next largest Acorn group within a three mile radius of the subject site is Comfortable Communities. This category contains much of middle-of-the-road Britain, whether in the suburbs, smaller towns or the countryside. All life stages are represented in this category. Many areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. Again, this sits above the proportions for the North West (25%) and Great Britain (27%).

There is a smaller proportion of households within three miles of the subject site that fall into the Financially Stretched category when compared with the proportions for the North West and Great Britain. This underlines the affluence in close proximity to the subject site, which dissipates when a larger catchment area is taken into consideration.

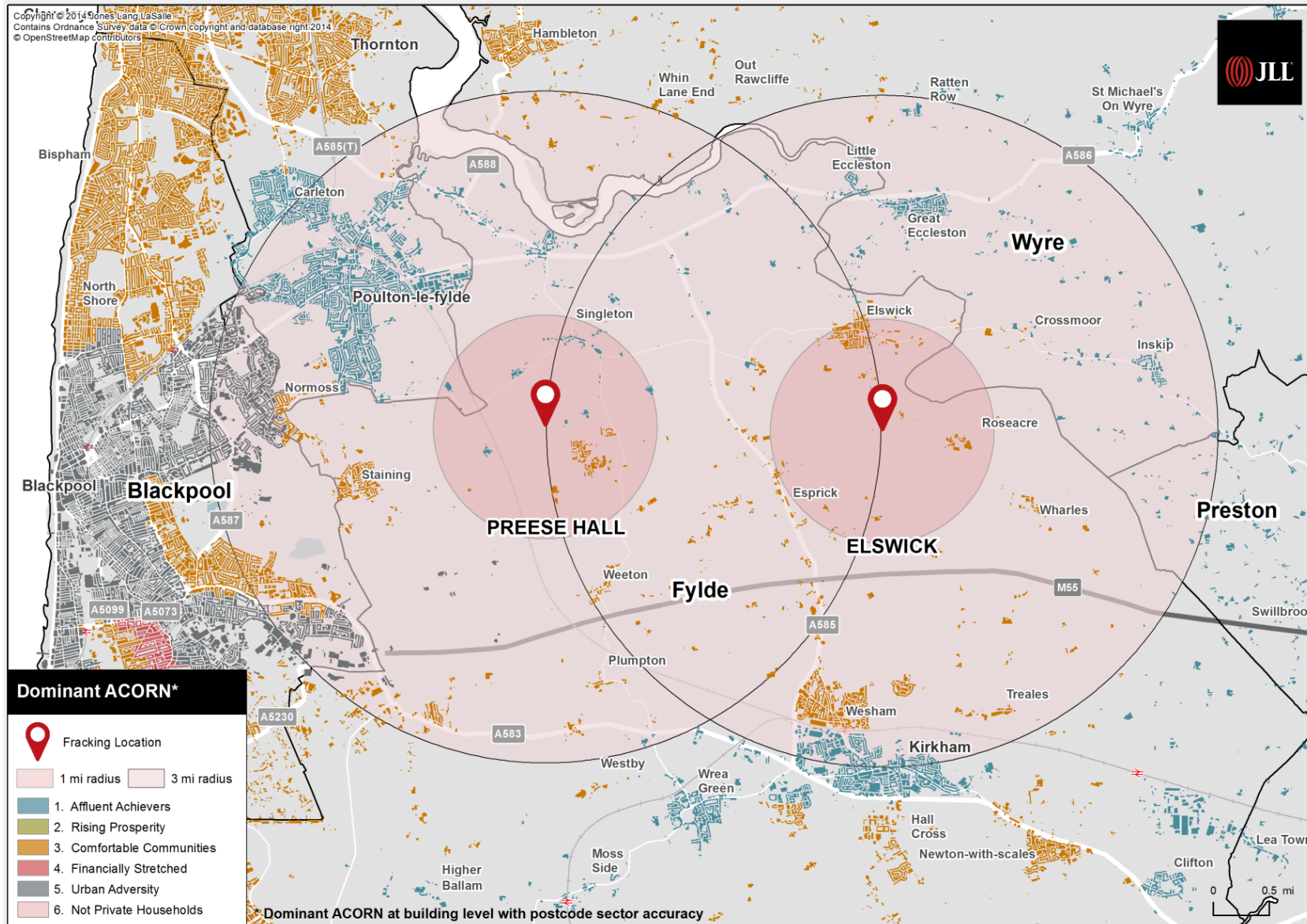
Households by Acorn group (% of households)	Preese Hall (3 mile)	North West	Great Britain	Preese Hall (1 mile)
Households	16,531	3,050,611	26,378,446	351
1. Affluent Achievers	34%	23%	22%	45%
2. Rising Prosperity	2%	4%	10%	12%
3. Comfortable Communities	31%	25%	27%	32%
4. Financially Stretched	14%	24%	23%	11%
5. Urban Adversity	19%	23%	18%	0%
6. Not Private Households	1%	0%	0%	0%

Source: JLL, CACI

## CACI Acorn category classification explanations

Households by Acorn group	
<b>1 Affluent Achievers</b>	These are some of the most financially successful people in the UK. They live in wealthy, high status rural, semi-rural and suburban areas of the country. Middle aged or older people, the 'baby-boomer' generation, predominate with many empty nesters and wealthy retired. Some neighbourhoods contain large numbers of well-off families with school age children, particularly the more suburban locations.
<b>2 Rising Prosperity</b>	These are generally younger, well-educated and mostly prosperous people living in our major towns and cities. Most are singles or couples, some yet to start a family, others with younger children. Often these are highly educated younger professionals moving up the career ladder. Most live in converted or modern flats with a significant proportion of these being recently built executive city flats.
<b>3 Comfortable Communities</b>	This category contains much of middle-of-the-road Britain, whether in the suburbs, smaller towns or the countryside. All life stages are represented in this category. Many areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. There are also comfortably off pensioners, living in retirement areas around the coast or in the countryside and sometimes younger couples just starting out on their lives together.
<b>4 Financially stretched</b>	This category contains a mix of traditional areas of Britain. Housing is often terraced or semi-detached, a mix of lower value owner occupied housing and homes rented from the council or housing associations, including social housing developments specifically for the elderly. This category also includes student term-time areas. There tends to be fewer traditional married couples than usual and more single parents, single, separated and divorced people than average.
<b>5 Urban Adversity</b>	This category contains the most deprived areas of large and small towns and cities across the UK. Household incomes are low, nearly always below the national average. The level of people having difficulties with debt or having been refused credit approaches double the national average. The numbers claiming Jobseeker's Allowance and other benefits is well above the national average. Levels of qualifications are low and those in work are likely to be employed in semi-skilled or unskilled occupations.
<b>6 Not Private Households</b>	These are postcodes where the bulk of residents are not living in private households which can be subdivided into three groups. Active communal population are people that may be in communal establishments yet still consumer to some degree. This includes defence establishments like military bases. It also includes hotels and other holiday accommodation. Inactive communal population are establishments like care homes, hospitals and other medical establishments.

## Dominant Acorn grouping by postcode



### 4.3 Age profile – Preese Hall

There is very little difference between the age profiles of the subject site, the North West and Great Britain. The proportion of the population around the subject site that are under 35 years of age is 38% - slightly beneath the proportions for both the North West and Great Britain at 43% and 44% respectively.

Age profile (% of population)	Preese Hall (3 mile)	North West	Great Britain	Preese Hall (1 mile)
Population	36,138	7,114,874	62,607,155	886
0 to 4	5%	6%	6%	12%
5 to 14	11%	11%	11%	15%
15 to 24	11%	13%	13%	15%
25 to 34	11%	13%	14%	22%
35 to 44	11%	12%	13%	13%
45 to 54	15%	14%	14%	8%
55 to 64	13%	12%	11%	7%
65 +	23%	18%	18%	9%

Source: JLL, CACI

### 4.4 Housing tenure trends – Preese Hall

Over two thirds of households within a three mile radius of the subject site are owner/occupied. This proportion of owned/occupied households is higher than the percentage in the North West (65%) and Great Britain (64%), which is a further indicator of the affluence of the local area.

Household tenure (% of households)	Preese Hall (3 mile)	North West	Great Britain	Preese Hall (1 mile)
Total households	15,980	3,009,549	25,738,843	303
Owner/occupied	71%	65%	64%	37%
Social rented	15%	18%	18%	13%
Private rented	16%	15%	16%	48%
Other	1%	1%	1%	2%

Source: JLL, CACI

### 4.5 Pay analysis – Preese Hall

Data from CACI reveals that 29% of households within the locality of the subject site earn more than £40,000pa. This is marginally higher than the North West at 25%, but below the proportion in Great Britain at 33%.

Age profile (% of households)	Preese Hall (3 mile)	North West	Great Britain	Preese Hall (1 mile)
<b>Households</b>	<b>16,531</b>	<b>3,050,611</b>	<b>26,378,017</b>	<b>351</b>
<b>&gt; £60K</b>	<b>2%</b>	<b>4%</b>	<b>7%</b>	<b>0%</b>
<b>£50 - £60K</b>	<b>6%</b>	<b>7%</b>	<b>9%</b>	<b>0%</b>
<b>£40 - £50K</b>	<b>21%</b>	<b>14%</b>	<b>17%</b>	<b>3%</b>
<b>£30 - £40K</b>	<b>31%</b>	<b>28%</b>	<b>29%</b>	<b>11%</b>
<b>£20 - £30K</b>	<b>28%</b>	<b>35%</b>	<b>31%</b>	<b>33%</b>
<b>£0 - £20K</b>	<b>11%</b>	<b>11%</b>	<b>7%</b>	<b>37%</b>

Source: JLL, CACI

#### 4.6 Employment analysis - Preese Hall

The employment profile of the population around the subject site is largely in line with the profiles for the North West and Great Britain. The largest proportion of residents - at 17% - are employed in Professional Occupations. This is in line with the North West (16%) and Great Britain (17%).

The next largest proportion is Administrative and Secretarial Occupations at 14%. This is above the proportions for the North West at 5% and Great Britain at 11%.

Employment analysis (% of working population)	Preese Hall (3 mile)	North West	Great Britain	Preese Hall (1 mile)
All Usual Residents Aged 16 to 74 in Employment	16,405	3,228,744	29,043,182	404
Managers and Senior Officials	11%	10%	11%	17%
Professional Occupations	17%	16%	17%	12%
Associate Professional and Technical Occupations	11%	12%	13%	28%
Administrative and Secretarial Occupations	14%	5%	11%	9%
Skilled trades	12%	11%	12%	8%
Personal service	10%	10%	9%	8%
Sales & Customer service	9%	9%	9%	7%
Process, plant and machine operatives	6%	8%	7%	4%
Elementary occupations	10%	12%	11%	8%

Source: JLL, CACI

#### 4.7 Acorn Analysis – Elswick

The predominant Acorn group within a one mile radius of the subject site is Affluent Achievers, accounting for two thirds of households. These are some of the most financially successful people in the UK. They live in wealthy, high status rural, semi-rural and suburban areas of the country. Middle aged or older people, the 'baby-boomer' generation, predominate with many empty nesters and wealthy retired. This is considerably higher than when looking at a three mile radius of Elswick (34%), the North West (23%) and Great Britain (22%).

The next largest Acorn group within a one mile radius of the subject site is Comfortable Communities. This category contains much of middle-of-the-road Britain, whether in the suburbs, smaller towns or the countryside. All life stages are represented in this category. Many areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. At 30%, this sits more in line with the proportions in a three mile radius of Elswick, (31%), the North West (25%) and Great Britain (27%).

The largest variance is the lack of households that fall into the Urban Adversity category. This category contains the most deprived areas of large and small towns and cities across the UK. Household incomes are low, nearly always below the national average. This is quite typical of a rural location, as households that tend to fall into this group reside in cities across the UK.

Households by Acorn group (% of households)	Elswick (1 mile)	Elswick (3 mile)	North West	Great Britain
Households	483	16,531	3,050,611	26,378,446
1. Affluent Achievers	66%	37%	23%	22%
2. Rising Prosperity	0%	2%	4%	10%
3. Comfortable Communities	30%	32%	25%	27%
4. Financially Stretched	4%	24%	24%	23%
5. Urban Adversity	0%	5%	23%	18%
6. Not Private Households	0%	0%	0%	0%

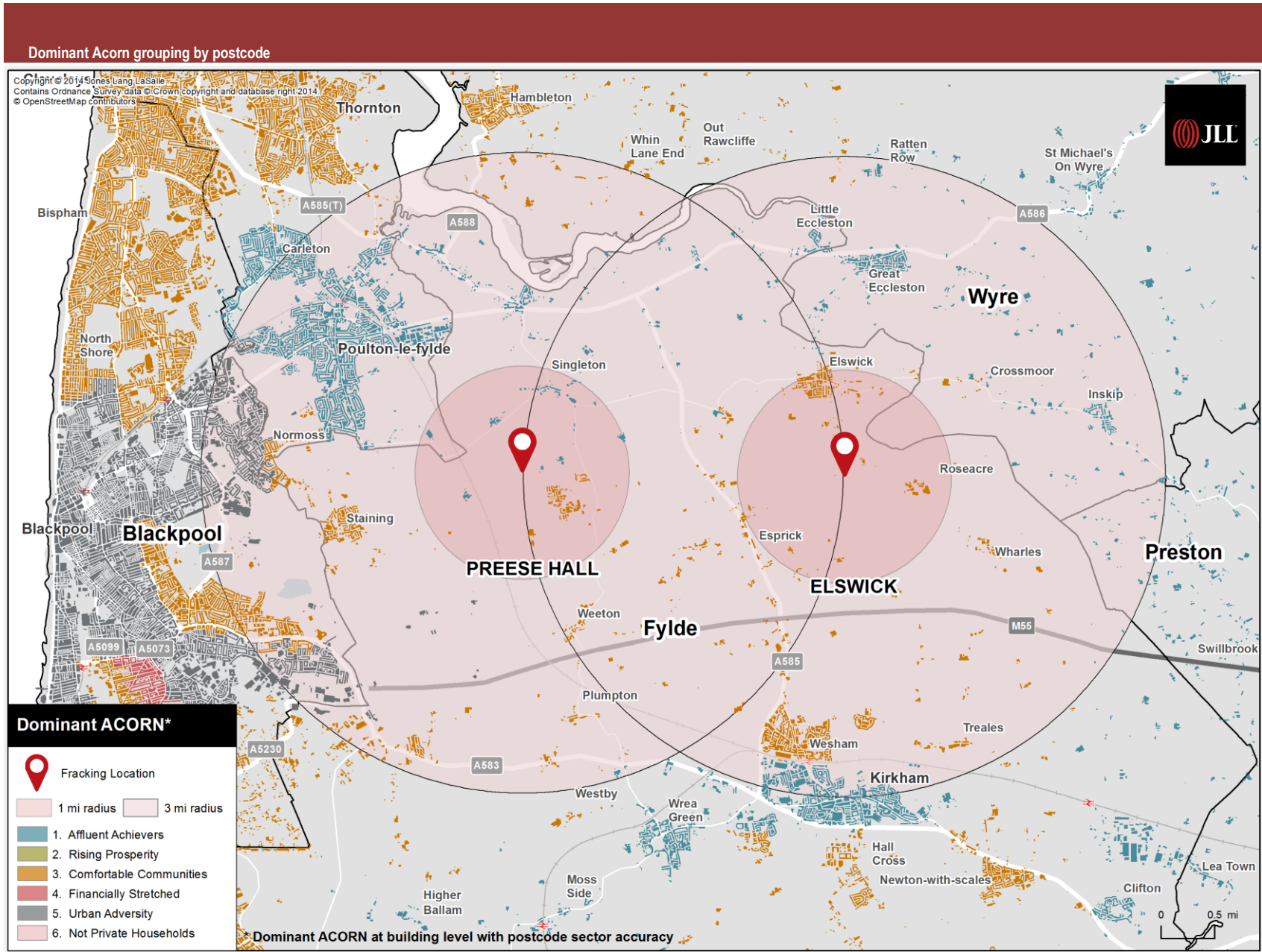
Source: JLL, CACI

## CACI Acorn category classification explanations

Households by Acorn group	
1 Affluent Achievers	These are some of the most financially successful people in the UK. They live in wealthy, high status rural, semi-rural and suburban areas of the country. Middle aged or older people, the 'baby-boomer' generation, predominate with many empty nesters and wealthy retired. Some neighbourhoods contain large numbers of well-off families with school age children, particularly the more suburban locations.
2 Rising Prosperity	These are generally younger, well-educated and mostly prosperous people living in our major towns and cities. Most are singles or couples, some yet to start a family, others with younger children. Often these are highly educated younger professionals moving up the career ladder. Most live in converted or modern flats with a significant proportion of these being recently built executive city flats.
3 Comfortable Communities	This category contains much of middle-of-the-road Britain, whether in the suburbs, smaller towns or the countryside. All life stages are represented in this category. Many areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. There are also comfortably off pensioners, living in retirement areas around the coast or in the countryside and sometimes younger couples just starting out on their lives together.
4 Financially stretched	This category contains a mix of traditional areas of Britain. Housing is often terraced or semi-detached, a mix of lower value owner occupied housing and homes rented from the council or housing associations, including social housing developments specifically for the elderly. This category also includes student term-time areas. There tends to be fewer traditional married couples than usual and more single parents, single, separated and divorced people than average.
5 Urban Adversity	This category contains the most deprived areas of large and small towns and cities across the UK. Household incomes are low, nearly always below the national average. The level of people having difficulties with debt or having been refused credit approaches double the national average. The numbers claiming Jobseeker's Allowance and other benefits is well above the national average. Levels of qualifications are low and those in work are likely to be employed in semi-skilled or unskilled occupations.
6 Not Private Households	These are postcodes where the bulk of residents are not living in private households which can be subdivided into three groups. Active communal population are people that may be in communal establishments yet still consumer to some degree. This includes defence establishments like military bases. It also includes hotels and other holiday accommodation. Inactive communal population are establishments like care homes, hospitals and other medical establishments.

Source: CACI







#### 4.8 Age profile - Elswick

The age profile around the subject site is very much in line with the North West and Great Britain. There is a slightly lower proportion of younger adults, with 35% of the population within one mile of Elswick being under 35 years of age. This is below the proportion for the three mile radius of the subject site (40%), the North West (43%) and Great Britain (44%).

Age profile (% of population)	Elswick (1 mile)	Elswick (3 mile)	North West	Great Britain
Population	1,052	36,138	7,114,874	62,607,155
0 to 4	6%	6%	6%	6%
5 to 14	11%	11%	11%	11%
15 to 24	10%	11%	13%	13%
25 to 34	8%	12%	13%	14%
35 to 44	13%	12%	12%	13%
45 to 54	17%	16%	14%	14%
65 to 64	17%	13%	12%	11%
65 +	18%	19%	18%	18%

Source: JLL, CACI

#### 4.9 Housing tenure trends - Elswick

Within a one mile radius of the subject site, 87% of households are owner/occupied. This proportion drops slightly to 75% when the radius is expanded to three miles around the subject site. This sits comfortably above the proportions for both the North West and Great Britain at 65% and 64% respectively. This underlines the affluence of the area.

Only 6% of households within one mile of the subject site are privately rented. This proportion increases to 14% when considering a three mile radius, which is in line with the proportions for the North West (15%) and Great Britain (16%).

Household tenure (% of households)	Elswick (1 mile)	Elswick (3 mile)	North West	Great Britain
Total households	303	5,108	3,009,549	25,738,843
Owner/occupied	87%	75%	65%	64%
Social rented	4%	9%	18%	18%
Private rented	6%	14%	15%	16%
Other	2%	2%	1%	1%

Source: JLL, CACI

#### 4.10 Pay analysis - Elswick

Data from CACI reveals that 70% of households within the locality of the subject site earn more than £40,000pa. This is considerably higher than the three mile catchment area (41%), the North West (11%) and Great Britain (16%). This underlines the affluence of the area and why there is a large proportion of owner/occupiers.

Age profile (% of households)	Elswick (1 mile)	Elswick (3 mile)	North West	Great Britain
Households	483	5,739	3,050,611	26,378,017
>£60k	8%	5%	4%	7%
£50 – £60k	20%	10%	3%	4%
£40 - £50k	42%	26%	4%	5%
£30 - £40k	26%	36%	6%	7%
£20 - £30k	4%	20%	8%	10%
£0 - £20k	0%	2%	12%	13%

Source: JLL, CACI

#### 4.11 Employment analysis - Elswick

In terms of employment, the largest proportion of residents, at 23%, are Managers and Senior Officials. This proportion sits above that of the North West and Great Britain at 16% and 17% respectively. The next largest proportion is Professional Occupations at 13%. This is marginally above the North West at 10% and Great Britain at 11%. Both of these categories have a higher earning potential than the other categories listed, which helps explain the high household earnings and large proportion of owner/occupiers.

Employment analysis (% of working population)	Elswick (1 mile)	Elswick (3 mile)	North West	Great Britain
All Usual Residents Aged 16 to 74 in Employment	595	6,250	3,228,744	29,043,182
Managers and Senior Officials	13%	12%	10%	11%
Professional Occupations	23%	19%	16%	17%
Associate Professional and Technical Occupations	10%	12%	12%	13%
Administrative and Secretarial Occupations	10%	11%	5%	11%
Skilled trades	12%	13%	11%	12%
Personal service	8%	9%	10%	9%
Sales & Customer service	7%	6%	9%	9%
Process, plant and machine operatives	5%	7%	8%	7%
Elementary occupations	11%	10%	12%	11%

Source: JLL, CACI



Residential Research

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