Demonstrating the True Value of Shopping Centres
Over the last 15 years, some of the largest and most innovative retail-led regeneration projects have redrawn the UK’s hierarchy of major cities and town centres. With each new shopping centre opening, jobs have been created, further investment triggered, new destinations established, and visitor numbers and local spending grown.

But what of the long-term impact? With some of these centres now over a decade old, has the initial promise continued to deliver? Equally importantly, what can their performance tell us about future needs?

For Hammerson, evaluating the socio-economic contributions of our shopping centre portfolio is as important as measuring its financial performance. It is only by taking both types of measurement into account that the true value of our assets can be established.

As the owner of 12 major shopping centres in the UK, welcoming over 180 million visitors a year, we are in a unique position to create a comparable form of analysis. In addition we are progressing some of the largest retail developments across the country in Leeds, Brent Cross, Croydon and Southampton continuing to look at innovative design. Using data from nine of our shopping centres, we have examined their impact and developed a model that can help predict the needs and potential contributions of future developments. This allows us to drive improved performance and lasting positive impacts in the areas where we operate.

David Atkins
Chief Executive, Hammerson
It is widely acknowledged that well run shopping centres can bring significant benefits to their local economies. However until now, few retail developers have attempted to understand and robustly measure the true value of those wider socio-economic impacts.

There are compelling reasons for developing our understanding in this area:

+ **Structural shift** in retail is dictating new rules \(^1\)

+ **Planning** requires that developments demonstrate sustainability across social, environment and economic headings \(^2\)

+ **Socio-economic factors** can impact perceptions of the benefits of a shopping centre and even influence perceptions of an entire area

+ The **growing recognition** of the link between shopping centres’ socio-economic performance and their long-term asset value

+ **Investors** are increasingly looking at sustainability as part of investment decision making

Through research undertaken by Jones Lang LaSalle and Envoy Partnership, combined with data collected from nine of our UK shopping centres, tangible evidence of the socio-economic contributions of our retail portfolio has been documented and assessed.

Further in-depth research was conducted at Bullring in Birmingham and at WestQuay in Southampton. These centres were selected because they reflect the broadest range of challenges and characteristics within the Hammerson portfolio and both have been in operation for over 10 years.

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2. The National Planning Policy Framework insists on ‘a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking’.
Additional Hammerson centres excluded from this report include:

+ Cabot Circus, Bristol, built in 2008 and currently run by Land Securities as part of a joint venture
+ Victoria Quarter, Leeds, acquired late 2012 post research launch
+ Monument Mall, Newcastle, acquired in 2011 and opening in 2013
Using a bespoke modelling tool, Hammerson commissioned a comprehensive study of the socio-economic impacts of nine of its UK shopping centres.

With the evidence gathered, together with the outputs from this study, we can now forecast the socio-economic impacts of future developments by automatically calculating a set of over 50 inter-related socio-economic indicators.

These are broken down into four key areas:

1. **Economic value generated by the shopping centre**
2. **Benefits to local and central government**
3. **Economic impact of the shopping centre on communities**
4. **Perceived change in communities’ quality of life**

The outcomes of this research are of critical importance to us. They enable better measurement and understanding of the overall contributions of our shopping centre portfolio. In addition, the results enable us to identify priority areas for improvements across future schemes.

“What makes this research unique is the comprehensive quantitative data that is supporting the modelling tool. This enables us to see very quickly the major impacts of our future developments.”

Sarah Breavington, Community Manager
1. Economic Value

With a net rental income of over £115 million, Hammerson’s UK shopping centres generate significant value for shareholders. However, in quantifying the full scope of the economic value generated by a shopping centre, we looked beyond the typical financial measures of turnover and retail income.

Our focus was the value in terms of economic contribution and employment that flows from a shopping centre into the local community through its lifetime, from construction through to operation.

1.1 Value generated through the construction supply chain

Research commissioned by the UK Contractors Group in 2012 showed that the construction industry is a key contributor to the economy.

Every £1 spent on construction output generates £2.84 in total economic activity (i.e. GDP increase) as a result of:

- **Direct impacts**: wage income and corporate profit generated in the construction sector as well as spend on non-labour inputs.

- **Indirect impacts**: supply chain impacts of construction and their knock on effects, i.e. increase in output and income up and down the supply chain.

- **Induced impacts**: increase in household income as a result of increased employment / income from construction and other sectors leading to an increase in spending and demand / output in the overall economy.

Whilst it is difficult to estimate retrospectively the overall economic impact of the construction spend across Hammerson’s shopping centre portfolio, our research shows there is a significant difference between new jobs created during construction when measured in Full Time Equivalent (FTE) terms, and Non FTE (on average 6.3 times more). This is a direct reflection of the nature of many construction jobs, which are often temporary and part time contracts. Understanding this allows us to more accurately predict the additional local spend during construction and reaffirms the importance of working alongside other local construction projects to ensure ongoing opportunities can be transferred across schemes.

We can now accurately assess the positive impacts in an area during construction. Below are two examples of future developments:

**Victoria Gate, Leeds**

- **2,700** CONSTRUCTION JOBS (NON - FTE)
- **£1.5m** ADDITIONAL LOCAL SPEND (PA)

**Watermark, WestQuay, Southampton**

- **1,450** CONSTRUCTION JOBS (NON - FTE)
- **£1.1m** ADDITIONAL LOCAL SPEND (PA)

This knowledge brings greater clarity to the impact of construction within a specific locale, giving us:

- insight into the numbers and types of jobs created
- predicted impact on the local economy and spending capacity during construction

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1. Economic Value

1.2 Value generated through retailer employment

Shopping centres are acknowledged as leading enablers of job creation. Of the 30,9404 jobs currently supported by Hammerson’s shopping centres, 93.5% of these come from retailers, with the remainder being Hammerson’s own shopping centre employees and suppliers. The total wages generated by employment at Hammerson shopping centres is currently estimated to be over £421million. This is set to grow as we continue to expand our retail portfolio through new developments and extensions.

Although there is no guarantee employees will spend their salaries within the local area, we know that the majority (an average of 87% across our centres) live locally or within a 20-mile radius. In turn, the centre will therefore be a major economic driver for the creation of new local wealth.

Further analysis found that part time jobs represent a large proportion of the retail workforce, meaning a significant difference between the total number of jobs supported and the total number of FTE jobs, 18,300 and 28,950 respectively. On average, 1.6 jobs support one FTE position. This detail provides new insights into the quantity and type of jobs being created across sectors. It also clarifies what training requirements are most appropriate to enable local people to access jobs.

Across our portfolio, we found that one FTE job is supported by 383 sq ft of net lettable area, although this ratio varies significantly across retail subsectors. For example, the average number of sq ft supporting one FTE job within clothing stores is almost three times higher than that of a restaurant. This granularity of detail enables us to work with local authorities to identify the number of future jobs created across a centre taking into account not only the net lettable area but the tenant mix too.

Hammerson centres:

- **30,940** CURRENT JOBS
- **93.5%** RETAIL JOBS
- **£421m** TOTAL WAGES GENERATED
- **87%** LOCAL5 EMPLOYEES
- **ONE FTE JOB IS SUPPORTED BY EVERY 383 SQ FT OF RETAIL SPACE**

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4. Not expressed in FTE (full time equivalent)
5. Local refers to those living within a 20 mile radius of a centre location.
1. Economic Value

Total number of jobs created per shopping centre (Hammerson employees, retailers and suppliers)

<table>
<thead>
<tr>
<th>Shopping Centre</th>
<th>Full Time Equivalent (FTE)</th>
<th>Total Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullring, Birmingham</td>
<td>3,047</td>
<td>4,946</td>
</tr>
<tr>
<td>WestQuay, Southampton</td>
<td>1,979</td>
<td>3,139</td>
</tr>
<tr>
<td>Brent Cross, London</td>
<td>2,512</td>
<td>3,918</td>
</tr>
<tr>
<td>The Oracle, Reading</td>
<td>2,032</td>
<td>3,111</td>
</tr>
<tr>
<td>Union Square, Aberdeen</td>
<td>1,737</td>
<td>4,316</td>
</tr>
<tr>
<td>Silverburn, Glasgow</td>
<td>2,217</td>
<td>2,617</td>
</tr>
<tr>
<td>Highcross, Leicester</td>
<td>2,739</td>
<td>4,327</td>
</tr>
<tr>
<td>Queensgate, Peterborough</td>
<td>1,709</td>
<td>2,617</td>
</tr>
<tr>
<td>Centrale, Croydon</td>
<td>1,262</td>
<td>1,944</td>
</tr>
</tbody>
</table>

Additional Hammerson centres excluded from this report include:
+ Cabot Circus, Bristol, built in 2008 and currently run by Land Securities as part of a joint venture
+ Victoria Quarter, Leeds, acquired late 2012 prior to research launch
+ Monument Mall, Newcastle, acquired in 2011 and opening in 2013
2. Benefits to central Government

Retail employment generates essential revenue for government through Income Tax, National Insurance and sales taxes. Beyond these direct taxes, there are other indirect benefits. Evidence shows those employed impose less of a burden on public services such as the healthcare, social services and the justice systems.

2.1 Local income tax contributions

Jobs across Hammerson’s shopping centre portfolio (retail and centre operations) currently generates in the region of £50.8 million in Income Tax and £40.5 million in National Insurance contributions. Additional financial contributions from a centre’s development and operation also include:

+ Section 106 planning agreements and the Community Infrastructure Levy.
+ £96.4 million collected by local authorities in business rates.

Recent reforms in the UK Government’s localism agenda allow local authorities to retain a proportion of business rates collected in their area. This further increases the impact and importance of contributions from future developments for local economies.

Whilst a large figure, the importance of redefining how business rate are measured should not be underestimated. Especially where rates may be hindering local growth.

2.2 Cost savings to Government

Employment across Hammerson’s shopping centre portfolio has in the last year saved an estimated £27.7 million in Government spending through reduced unemployment benefit claims based on those employees who were claiming benefits prior to working at the centre.

With retail often being accessible for entry-level jobs, a high proportion of applicants at the time of shopping centre openings are people who were previously not in employment (72% at Highcross, Leicester). Our research shows that on average 37% of jobs created go to those previously claiming unemployment benefits, 12% to those under the age of 25 or to young people not in employment, education or training (NEETs).
Research by Oxford Economics indicates that there is also a long-term employability penalty related to youth unemployment.

Every three months spent unemployed by people under 23 is likely to lead to 1.3 months unemployed per year between the ages of 28 and 33\(^6\). The long-term benefits of job creation that target this demographic should not be underestimated and adds weight to the importance of our centre activities that support NEETs.

There are also cost savings to Government from reduced offending and better health and well-being. Evidence from the Prince’s Trust’s Youth Index\(^7\) indicates that the likelihood of being in poor health and having lower wellbeing doubles whilst being unemployed.

There is also a greater incidence of those in long-term unemployment to committing criminal offences. Linked to this we know cost savings to Government from employment across Hammerson’s portfolio are estimated at £6 million and £615,000 respectively through contributions to reduced offending and healthcare expenditure based on numbers of employees who were previously unemployed.


7. Prince’s Trust Youth Index 2010
3. Economic benefits to the wider community

Whilst the direct economic benefits of shopping centres in terms of job creation, wage bill and taxes are relatively straightforward to quantify, indirect impacts on the local economy are more complex and often subject to debate. There was therefore a need to look at specific locations to understand local stakeholder views and look at wider economic impacts. WestQuay and Bullring were identified as two contrasting centres that are both well established within their city locations. Economic impacts on other high street retailers and independent businesses in these locations could then start to be quantified.

Our research found that shopping centres are seen as key contributors to the revitalisation of town and city centres and are an integral part of the high street, and not just in terms of their financial success.

Through direct engagement with local residents, business and key stakeholders, we were able to establish their views on what a shopping centre actually means to a high street.

3.1 Inward investment

Beyond business rates, shopping centres also support Local Authority revenues by enabling inward investment to town and city centres. This investment boosts economic growth, which in turn generates additional taxes.

Combining information from interviews with the local authority, political representatives, service providers, businesses and residents and research on economic impact, it showed that inward investment of £337 million can be directly attributed to the development of Bullring and WestQuay. This is solely in relation to just two developments; the Southampton Cultural Quarter and the Birmingham New Street Project8.

3.2 Additional growth

The effect of the location of a new shopping centre on a town or city’s existing retail mix is complex with multiple differing impacts dependent on various local characteristics.

“Birmingham is now a family destination. People from farther out see it as a day out destination because of Bullring.”

Local stakeholder, Birmingham

Further investment as a result of Bullring:

£500m BIRMINGHAM NEW STREET PROJECT

Further investment as a result of WestQuay:

£175m CULTURAL QUARTER

8. Based on qualitative interviews with high-level stakeholders. A higher inward investment is likely with further research.
Although sometimes perceived to have a negative impact on local businesses, shopping centres can bring additional spending from visitors and retail workers into local independent stores. Hammerson’s shopping centres bring an estimated £279 million of additional spending to their surrounding locations.9

Measuring economic growth generated by a new shopping centre is dependent on its turnover, its lettable area, and new footfall attracted to the location. Two other key factors also need to be taken into account:

+ The possibility that spending would occur regardless of the shopping centre generating new retail turnover. Our analysis has assumed a 90% spend occurring had the shopping centre not been built as well as making an allowance for wealth not being spent locally.

+ Displacement of revenue from local businesses outside the centre to the shopping centre. At Bullring and WestQuay, some local shops reported revenue and footfall displacement.

After accounting for these two factors, it is possible to calculate ‘real’ or additional spending growth.

Based on Hammerson’s portfolio average, the development of a new shopping centre with a net lettable area of 400,000 ft² and a total turnover of circa £100 million could potentially generate up to £15 million a year in additional spending in a town or city centre from spending by retail workers and visitors. Around 8.7% of this spend would benefit independent traders10 outside the centre and a further 20% would benefit high street brand stores.

Despite reported displacement in revenue and footfall, on average, surveys of local businesses outside the shopping centres showed a total revenue growth of some 8% since opening.

3. Economic benefits to the wider community

Additional spend
Hammerson’s centres bring to high street locations:

- £279m additional spending at Hammerson centre locations
- 8.7% additional spend to independent traders
- 20% additional spend to highstreet stores

9. Based on qualitative interviews with local residents and local basket spend data
10. Independent traders refers to individuals who own shops that are not part of a chain with multiple stores across locations
3. Economic benefits to the wider community

Impacts of the opening of WestQuay and Bullring on the existing retail offer:

**WestQuay – Opened in 2000**

- Increased quality of retail offer
- Decrease in rent levels on the high street furthest from WestQuay
- Revenue growth 8% on high street
- Footfall decrease in John Lewis’ previous location
- 27th to 19th in national retail rankings

**Bullring – Opened in 2003**

- 90 new retail entrants to the city
- New modern retail units
- Fall in rental tone outside centre
- Increased footfall across city centre
- 12th to 3rd in national retail rankings

Changes in rental levels around the shopping centres also reflect the wider displacement impacts on the local retail offer. While rents at Bullring and WestQuay have increased over the last ten years, a decrease in rental levels has been observed by the high street retailers located in the same postcode as WestQuay and the Bullring.

These findings emphasise the importance of ensuring developers work closely with local planning authorities and architects to develop schemes that:

- Integrate existing high streets.
- Work with local policy makers to ensure areas can have maximum benefit from centre openings.
- Ensure the right retail mix meets the wider needs.

3.3 Benefits to local residents

Along with creating a leading retail destination, the principal benefit identified by residents as a result of a new shopping centre was the employment opportunities created.

Surveys carried out at Bullring and WestQuay showed that on average:

- 85% of jobs created through retailers go to people living within 20 miles of the centre.
- 37% of the retail jobs benefit individuals who were previously unemployed and claiming Jobseeker’s Allowance.
3. Economic benefits to the wider community

Additional economic benefits for local residents can include growth in residential capital values. Residential units located in the same postcode areas as Bullring and WestQuay saw average capital value growth over the three years from opening. However analysis revealed that other economic factors have more influence over pricing in the long-term.

In the Birmingham postcode B5 in which Bullring is located, average annual capital growth was £6,250 (4%) per year in the first three years of opening. This tracked the wider Birmingham market. When looking specifically at apartment prices in the B5 postcode, they increased in price and remained much higher than elsewhere in the wider city.

In contrast, in WestQuay postcode SO14, house price growth was £16,260 (15%) per year in the three years following WestQuay opening. Although slightly higher than the city average, prices loosely tracked wider averages up until 2004, when prices remained stable. Since 2004, average apartment prices in SO14 have remained slightly below the level of the wider Southampton market. A key factor here is market saturation particularly for apartments, within the city centre; 77% of housing within the WestQuay ward of Bargate is apartments compared to 39% across the city.

We can therefore see that a shopping centre can bring a short-term increase to local property values. However there are a number of factors such as wider regeneration and economic trends that will ultimately determine longer-term value of properties located close to a shopping centre.

Job creation for local residents:

- 37% claiming unemployment benefits
- 85% retail jobs to those within 20 miles
4. Perceived change in quality of life

Shopping centres act as catalysts for the long-term revitalisation of towns. Often becoming key landmarks, schemes not only dramatically improve the physical and social fabric of the urban environment, but also regenerate economic fortunes and improve local quality of life in the process.

Quantifying changes in quality of life in relation to the development of a new shopping centre is as much about understanding people’s perceptions about how their wellbeing has been affected, as it is about collecting tangible evidence.

In researching the opinions of local stakeholders and residents at WestQuay and Bullring, it was evident that both shopping centres have had considerable impacts on the quality of life of the respective areas.

A key element of our research therefore was to measure the perceived change in local residents’ quality of life compared to not having the shopping centre built.

This included looking at:

+ Connections within city wide transport links
+ Perceptions of safety around the centre
+ The impact of a centre’s architecture
+ People’s sense of pride in their local area

4.1 Contributions to quality of life: success factors

Surveys undertaken on a sample of 250 individuals comprising stakeholders and visitors to Bullring and WestQuay in 2013 revealed successes common to both shopping centres.

+ Both shopping centres represented a substantial improvement to their respective cities and to the local quality of life compared to if they had not been built.

+ In both cases, the shopping centres high quality architecture was found to have enhanced the cityscape, having a lasting impact on the urban fabric and improving local pride. Bullring’s architecture has become an iconic representation of Birmingham’s identity. WestQuay is also perceived to have improved the architectural quality of Southampton.

11. It is important to acknowledge that any perceived improvements in relation to these issues relate to a number of factors that relate to the development of these shopping centres as well as other regeneration improvements, all results have been adjusted to take account of the extent to which they can be attributed to the developments of the shopping centres.
4. Perceived change in quality of life

+ The quality of the public space gave a significant sense of enjoyment, enabling social activities such as meeting with friends for lunch, coffee or dinner, as did the choice of stores.

+ Bullring and WestQuay have significantly contributed to improving the perception of safety and accessibility of their respective locations. The success of Hammerson’s collaboration with the local police authority at WestQuay has seen a reduction in crime levels of up to 60% over the past 10 years.

+ Bullring and WestQuay have established the status of Birmingham and Southampton as major regional shopping destinations, raising the national profiles of both cities. Bullring has propelled Birmingham into the top three of the UK’s retail destinations from 12th to 3rd place. WestQuay has taken Southampton up eight places to 19th in the rankings.

4.2 Future direction

There are some important differences in the performance of both centres in terms of the perceived impacts on the city centre compared to if the shopping centres had not been built. These differences reinforce our approach to developments ensuring that we:

+ Establish clearer linkages between the shopping centre and the High Street.

+ Unlock the value of public spaces or heritage assets to create more engaging and appealing features. This enhances the long-term value of the site and quality of the visitor experience, in turn leading to increased footfall to the centres.

+ Deliver positive improvements to city centres in terms of road structure and accessibility with improved transport linkages.

Responses from all stakeholders also demonstrated how shopping centres are now seen as an integral part of the visitor experience to towns and city centres. However there is also a need to ensure there is the right mix of retail as well as leisure and catering destinations. Providing the right mix and choice of this offer needs to be balanced between improving the general standard available in the city centre, while also being complementary to that found in the high street.

12. The question format also aimed to provide an indication of resident perceptions comparing the town to before construction began. Questions on impact of the shopping centre on the city were asked in direct comparison to if the shopping centre had not been built. This was measured on a 0 to 10 scale, with a score of 5 = No change to the city. Scores below or above 5 were then converted to % changes over time.
4. Perceived change in quality of life

4.3 Helping businesses adapt to change

In the short to medium term, following a centre opening, retail voids increased in the immediate vicinity of WestQuay and the high street in Southampton, and in some of the other local shopping centres in Birmingham. This may have a negative impact on the area’s appeal to visitors who may then seek out alternative destinations that are more vibrant.

Qualitative and quantitative data from local businesses, independent traders and market traders in the local area provided mixed responses to surveys.

+ Many appreciate that while footfall will have increased, revenues have declined due to the austere economic climate. They believe visitors’ disposable income is becoming increasingly directed towards the shopping centre offer and competitive online products.

+ This reflects the nature of competition, and the need to increase quality, knowledge, skills and diversity amongst local enterprise in order for them to succeed.

+ It will become increasingly important to support the skills development of local businesses and enterprise in order to counter any erosion of local value. Hammerson’s work in this area already includes activities such as making the expertise of our onsite teams at Brent Cross available to start-ups, and working in Croydon to identify opportunities for business incubator stalls and pop-up store initiatives.

+ The retail mix on the high street has never been more important with success coming with a diverse offer, that meets the needs of today’s customers. Increasing the retail mix across a location is important for not only a successful high street but a successful shopping centre.

“WestQuay is a vast improvement on what was there before which was an industrial site. The shopping centre changed the dynamic of the whole city centre. It gave the city a daytime economy, a heart to the city. In terms of appearance, it is a vast improvement. Architecturally it was quite well done and modern, and it will be further enhanced by the next phase of the extension.”

Local stakeholder, West Quay, Southampton
Retail is rapidly evolving and becoming more competitive than ever. Understanding what value our centres can bring to a local area will be instrumental in ensuring new developments can respond to a new retail context and are successful over the long-term.

With nearly 40,000 jobs created across our centres, 85% of them going to people living locally, we can see how centres become a focal point in the community and impact the local economy. Wage contributions alone account for £421 million across our centres in addition to £96 million in business rates.

By quantifying our economic impacts we can continue to build on our work with local organisations to ensure the wider community is able to increasingly benefit from the wealth a scheme can create. The ability to serve communities at a wider level will mean growing the role and influence of shopping centre activities to drive more support for local businesses, independent retailers, the unemployed and residents.

Valuing the financial savings and improved quality of life generated through enabling the unemployed and NEETs to access jobs illustrates the importance of our approach of targeting these groups in our recruitment programmes. Understanding the numbers and types of jobs created in a centre also ensures we can provide tailored training to give these groups greater opportunities to access jobs and develop skills to support long term employment.

In continuing to consider the physical and economic environments in which a shopping centre will operate we can ensure that it really is at the heart of the community and brings further regeneration to an area throughout its lifetime and for generations of local people.
I. What economic value is the centre likely to generate?

- New jobs created (Full Time Equivalent)
- New jobs created (Non-Full Time Equivalent)
- Estimated wagebill from jobs created (Full Time Equivalent)
- Hammerson’s turnover & service charges (first year)
- Indirect value created within the construction supply chain (£)
- Change in high street retail rent (from centre postcode) - 3 years after the centre opening

II. How does the community benefit economically from the centre?

- Number of jobs going to people living within 20 miles of the centre
- New additional spend in the local economy from visitors and workers
- Inward investment attracted for development works within 10 years of centre opening (£)
III. What fiscal contributions to central government is the centre likely to generate?

IV. How will people’s quality of life have been impacted?

[All measures below, except Residential Values & National Crime Data, indicate the perceived changes compared to if the building had not been built, based on surveys of visitors undertaken at Bullring and WestQuay]
All statistics quoted in this document are based on a comprehensive data collection exercise in 2013 across the Hammerson shopping centre portfolio and from research undertaken by Jones Lang LaSalle and Envoy Partnership on behalf of Hammerson.

Some estimates have been used where data was unavailable.

Sources of data include:

+ Economic contribution data collected across nine Hammerson shopping centres.
+ Visitor surveys across a sample of 250 people at WestQuay and Bullring.
+ Urban design and architectural site surveys of Bullring, WestQuay and Highcross.
+ Surveys across a sample of 35 local businesses at WestQuay and Bullring.
+ Interviews with local stakeholders at both WestQuay and Bullring (high-level personnel at Chamber of Commerce, Police Service and Local Authority).
+ Jones Lang LaSalle research into residential prices and retail rents across two site locations of Birmingham and Southampton postcodes.
+ National level data collected across a number of open sources [e.g. Office of National Statistics Labour Force data and NOMIS data], HM Revenue and Customs, UK Contractors Group 2012, academic journals.
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