

**Proof of Evidence**

**Andrew Jay MRICS**

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**APP/K0425/W/3135297**

**FOR THE REDEVELOPMENT OF THE  
FORMER MOLINS SITE**

**HAW LANE, SAUNDERTON**

**WYCOMBE**

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## **1.0 Professional Background**

- 1.1 My name is Andrew Jay and I am a Chartered Surveyor (RICS membership no. 0085822) having graduated from Nottingham Trent University with a BSc (Hons.) degree in Urban Estate Surveying in 1989 and became an Associate of the Royal Institution of Chartered Surveyors in 1992. I have been employed by CBRE since 1989, and set up the EMEA Data Centre Solutions team within its Global Corporate Services business in 1999. I remain Head of the EMEA Data Centre Solutions practice today. The practice has grown to become the largest data centre real estate advisory group in the world. In this capacity, I advise data centre occupiers, providers and investors on all aspects of the technical real estate market, including acquisitions, valuation, development, leasing and corporate data centre dynamics. We are principally a transactional team albeit with a very strong consultancy offering.
- 1.2 I am Chairman of TechUK's Council of Data Centre Operators, the group responsible for changing the UK Government's energy legislation to benefit the data centre industry and am also on the board of the Data Centre Alliance (DCA), a transnational professional association representing the data centre industry.
- 1.3 I am responsible for the unique research provided by CBRE into the Global Carrier Neutral Data Centre market which monitors current and predicts future changes in colocation supply, take up and pricing in all the main markets of EMEA. I regularly speak at the main data centre industry conferences.

## **Relevant Experience**

- 1.4 Significant projects include:
- Set up and management of AT&T's global network rollout which included the completion of 180 data centre leases in 46 countries across the world (including all main Asian markets) in two years;
  - Rollout of IBM Softlayer's network of data centres (global outside of the US) for their new cloud services platform; and
  - Provision of market advice to enable CBRE's annual valuation of the Global Switch portfolio.

- 1.5 CBRE has an established Data Centre team which was formed to address the specific real estate needs of high-tech firms, particularly telecommunications and enterprise companies. The Group consists of over 30 senior members in strategic markets worldwide, managed by a staff of salaried professionals, providing comprehensive real estate consulting and brokerage services for the technology sector.
- 1.6 Since 1994 the specialist Data Centres team has advised a broad range of organisations across Europe, from the Telecoms, IT and Corporate sectors in the acquisition and disposal of technical real estate. Projects have ranged from individual corporate data centre acquisitions including JP Morgan Chase, Barclays and Credit Suisse to network rollout programmes for companies such as Global Crossing (2m sq ft acquired in Europe – 80 transactions, 24 months) and AT&T (140 acquisition transactions managed in Europe, Asia, Africa and the Americas).
- 1.7 London is the European hub of the CBRE Data Centre Solutions group, where there is a dedicated team of 11 people specialising in providing Data Centre advisory services. In particular as part of our regular research publication (Data Centre Market View), CBRE tracks the supply and vacancy within all of the major carrier neutral data centre facilities across Amsterdam, Paris, London, Frankfurt and Madrid and as such we have a detailed understanding of the dynamics of the European data centre market.
- 1.8 The evidence which I have prepared and provide for this appeal reference APP/K0425/W/3135297 in this proof of evidence, is true [and has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.

### **Scope of Evidence**

- 1.9 In my evidence I present the findings of my analysis of the Data Centre market changes in the period between the sale of the Site by E-Shelter in [DATE] to date; the current Data Centre market position; and the Site's development potential. All definitions used in this Proof of Evidence correspond with those in the Proof of Evidence of Mr Pravin Patel, save where indicated otherwise.
- 1.10 In my proof of evidence I set out at section (2) the evolution of the Data Centre market; section (3) the characteristics of the London Data Centre Market; section (4) the demographics of the London Data Centre market; section (5) E-Shelter's original Data Centre

proposals; (6) the market potential of the Site for Data Centre development including risks; and (7) my conclusions.

## **2.0 EVOLUTION OF THE DATA CENTRE MARKET**

2.1 Post the telecoms deregulation in the mid to late 90's, there was a glut of data centre space constructed across the world to suit the needs of both carriers and 'dot com' companies, both of which significantly overestimated the amount of data centre space their business models required.

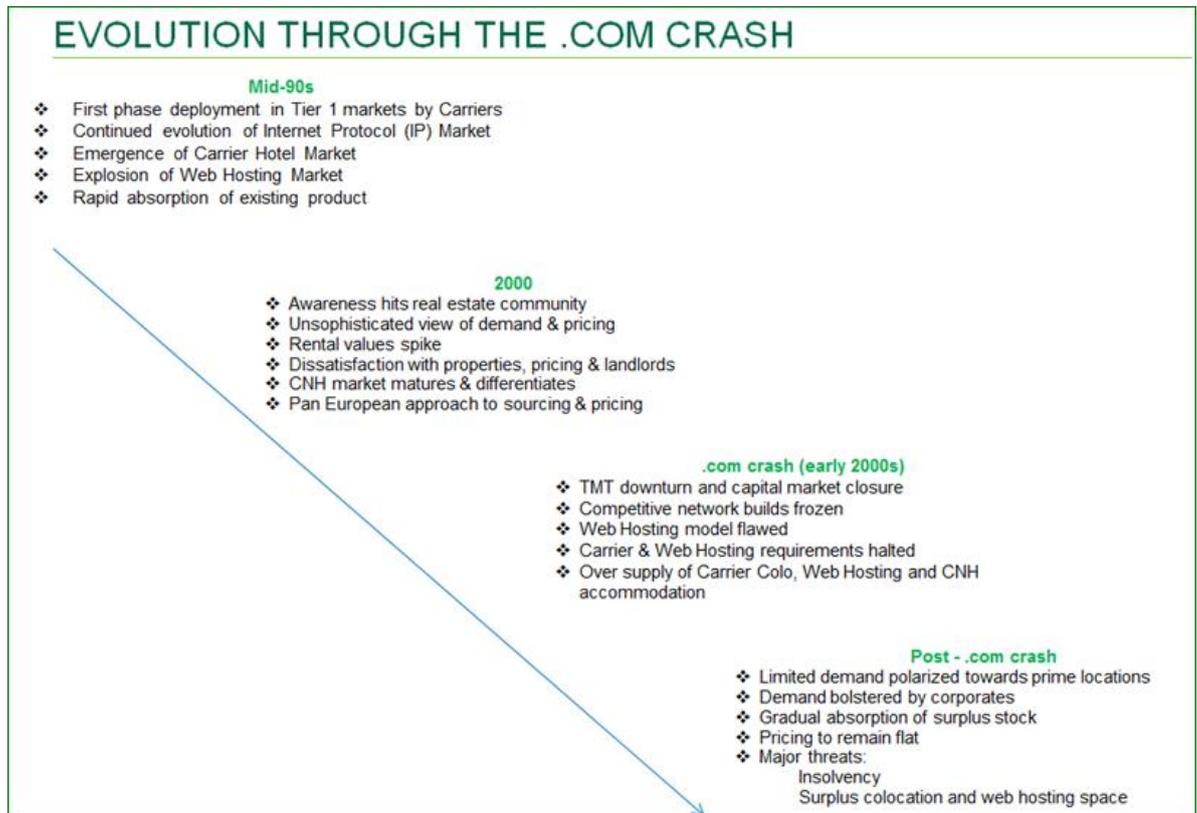
2.2 In Europe four major data centre markets emerged, namely London, Paris, Amsterdam, Frankfurt and Madrid. London became the European hub, due both to its geographic location and being the centre of European commerce. As such, London is the most mature of European markets and the development of its data centre market best demonstrates how the markets across Europe have evolved over the last 10 years. Additionally, in terms of demand, London has the most financial services organisations headquartered in Europe which have been one of the strongest demand drivers for data centres.

2.3 Using London as the benchmark for market evolution across the continent, the data centres built out between 1999 and 2001 were done so in a 'retail colocation' style (i.e. large amounts of fully fitted space with shared infrastructure). During 2001, the technical real estate market in London showed relatively strong performance as the technology boom was in full swing at the beginning of the year and whilst the bubble burst at the end of the first quarter, a significant level of take-up occurred during the course of the year as a continuation from the technology boom. As the technology boom turned into bust, 2002 saw a fall in the Carrier Neutral Hotel (CNH) market (definition in Appendix A – Glossary of Terms) take-up as requirements within the telecoms and technology sector almost disappeared and the emergence of the corporate market was restricted by limited IT budgets.

2.4 At that time, threat stock emerged as a number of carriers and web hosting organisations started to release surplus colocation and hosting space into the market which was competing with the CNH operators. Following the events of September 11th 2001, distressed data centre opportunities were aggressively pursued by the leading investment banks to satisfy their requirements for new data centre requirements.

- 2.5 With almost no supply of distressed properties on the market and a continuation and increase in acquisitions from the corporate sector, a number of requirements throughout 2004 were diverted to the CNH sub-market. This resulted in a pronounced decrease in the vacancy rate of CNH properties and in turn led to further diversions to non-CNH facilities and larger corporate requirements to shell stock. The spur of demand and the subsequent lack of high quality, contiguous space on the market led to a misalignment of demand and supply dynamics. This misalignment has resulted in opportunities in certain submarkets for specialist developers and investors.

## Timeline



### Emergence of wholesale colocation

2.6 As take-up from corporate occupiers accelerated during 2004, vacancy rates in the CNH market dropped to record levels, particularly in west London. The lack of supply was further compounded by the fact that the existing CNH stock in London comprised of data centres constructed in the late 1990s, which were designed to meet the legacy typical power density requirements of 500 - 750 Watts per m<sup>2</sup> and built on a shared infrastructure platform. This stock was incapable of meeting the higher specification and dedicated infrastructure demands of the corporate sector in particular.

2.7 With the distressed data centre assets and the supply of quality shell properties now absorbed, in 2004 and 2005 there were a limited number of options available to house larger corporate requirements with sufficient power and fibre availability. At the same time, the market witnessed an increase in demand from corporate occupiers requiring data centre space of between 1,000 m<sup>2</sup> and 3,000 m<sup>2</sup>. The smaller size requirements in this range are not

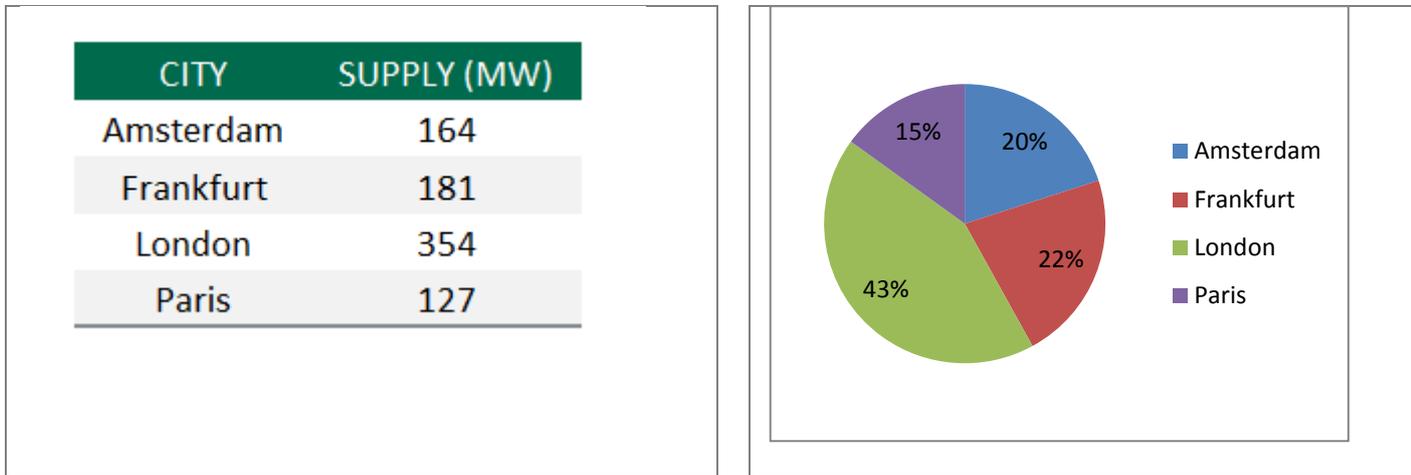
sufficient to justify building out new data centres from shell stock but with the vacancy rate of fully-fitted retail colocation space in London at 4.19%, there was a considerable lack of quality CNH space to meet these requirements.

- 2.8 This was compounded by the fact that this supply was characterised by small, often shared, suites rather than contiguous space, and therefore not appropriate for most corporate occupier requirements. As such, a new breed of specialist developers began to acquire large industrial units in London locations in which they could construct modular data centre halls with dedicated M&E infrastructure designed to the specific requirements of the individual occupiers.

### **3.0 LONDON MARKET CHARACTERISTICS**

- 3.1 The London Market (see map, page X) is at the forefront of the UK data centre landscape with its positioning on major fibre routes to mainland Europe key in ensuring a consistent demand for data centre services. The borders of the London data centre market are not formally defined but, in practice, they extend from the City of London to include Welwyn Garden City (Colt, Digital Realty), Crawley (Digital Realty), Farnborough (Ark) and Slough (Equinix, Virtus, IO and others).
- 3.2 During the past decade the need for synchronous replication (low latency) of operational data, particularly from the financial services sector, and the proliferation of IT dependent applications has underpinned market demand. Socially, and in the business arena, the use of the internet has grown exponentially. This has led to a rapid rise in operational data centres in both the UK and particularly around the Slough area; replacing previously held in-house IT functions as outsourcing becomes a preferred solution.
- 3.3 The London Market today accounts for an estimated 80%+ of current colocation supply in the UK. London is one of the world's most important communication hubs globally, registering among the largest markets for both international Internet bandwidth and colocation. London is also the largest data centre market in Europe with 40% of the total supply in the major European markets of London, Frankfurt, Amsterdam and Paris being located in London.

### European Major Market Colocation Supply



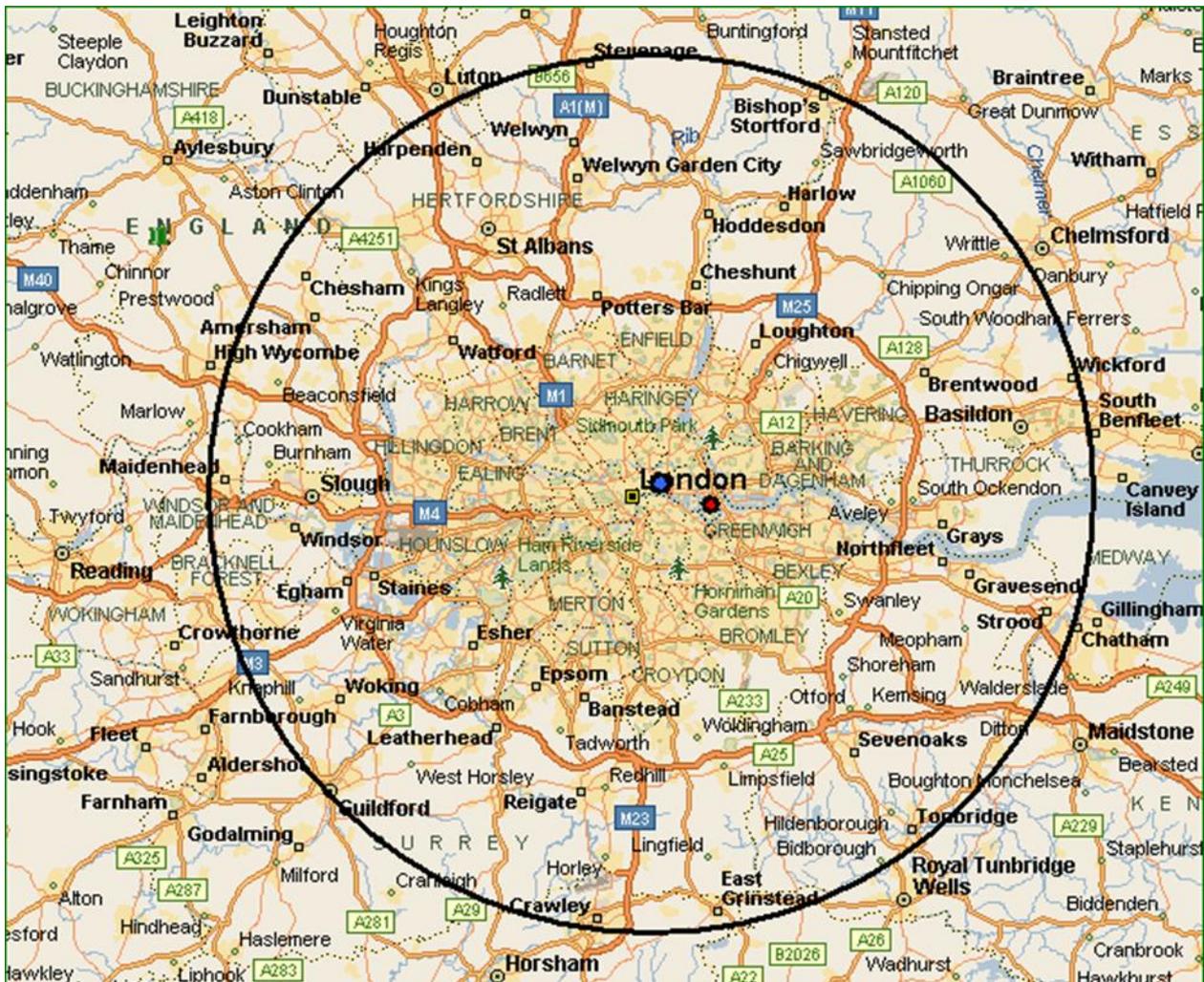
- 3.4 Supply of new technical IT power within the London area has increased over 6 times since 2002. London also boasts the largest concentration of Global and Pan European data centre operators in Europe and continues to expand; a further 17MW was added to the total London colocation supply registered last year alone. Examples of significant supply announcements in 2015 included IO's first UK facility in Slough and Equinix launching their newest London site LD6, also in Slough.
- 3.5 In 2016 Gyron will launch its new facility in Hemel Hempstead, Zenium will start construction work on their new Slough data centre and Infinity has announced that it will bring on its site in Stratford. Gyron are believed to have already successfully sold a sizable amount of space in their London data centre on a pre-let basis. Its facility in Hemel Hempstead, though not as far from London as Saunderton, is a good example that tenants looking for space in the London Market are increasingly willing to locate further from Central London.
- 3.6 Another example is Slough, which has become one of the most populated and prominent areas for data centres in the UK. The types of data centre companies that have moved to Slough and Hemel Hempstead, such as Virtus, Zenium and Gyron, operate with the same business model as e-shelter who are a wholesale colocation company. E-shelter are the company who previously owned the Site and obtained the current planning permission for data centre development.

- 3.7 This radius from central London is likely to expand in the coming years and so there is a real possibility that areas such as Saunderton, which are currently on the outer edge to the London Market, will be successful in winning London Market demand.
- 3.8 The development of new data centres is extremely costly and the London Market would not have evolved as it has if there was not sufficient demand to warrant such investment. In 2015 London closed the year accounting for 41% of total take-up recorded within the four carrier neutral major markets of Europe. London has seen most take-up in Europe for all but one of the last 10 years. London's position as the European economic powerhouse continues to drive demand for the market.
- 3.9 The UK has other markets, such as Manchester and a few data centres dispersed geographically, but these have not developed significantly in the last two years. Traditionally, outside of London Market, the regional data centre landscape consists of system integrators, internet service providers and large standalone corporate data centres situated to service regionally located corporate headquarters. There are no comparable markets to the London Market.

#### **4.0 LONDON MARKET DEMOGRAPHICS**

- 4.1 The London Market is the largest data centre market in terms of supply, accounting for 43% of the total stock across the four major markets of Europe. The four major markets are London, Paris, Frankfurt, Amsterdam. The tables and graphs in Section 3 give a detailed macroeconomic overview of the London Market.
- 4.2 The new wholesale supply over the past 5 years has been dictated heavily by demand. The majority of operators currently have facilities with powered shell space in preparation for the technical space to be fitted out to meet demand. London currently has 65MW of available supply (which excludes unfitted space held by retailers). This 65MW would take 2.9 years to be absorbed given a 5-year average for take-up in the London Market, which is down from an absorption rate of 3.6 years, just six months ago. 2.9 years is in the range of what I would consider market equilibrium between supply and take-up. Over the past 10 years of tracking supply, CBRE note that when vacancy rates in the whole market diminish to circa 20% there is a general trend of developers returning to market to acquire new stock. London Market vacancy rate currently sits at 18.3%.

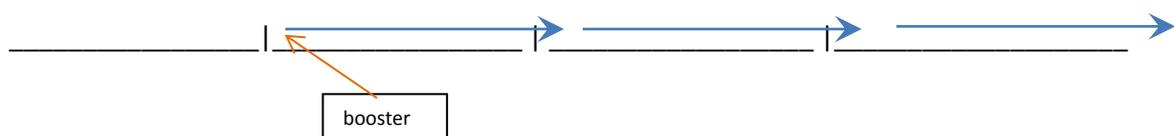
4.3 I see three data centre sub markets in the London Market; Docklands, City and the wider London Market. The map below shows the areas each market covers.



- Red dot: Docklands
- Blue circle: City of London
- Black circle: The London Market, using Crawley where Digital Realty has a data centre as the benchmark for the radius.

4.4 Each market attracts different occupiers, with the Docklands and City locations often competing for the same business. Historically the Docklands was the only data centre hub of the UK as this is where the fibre first landed in London from the south west coast. The area also had a surplus of power and lower cost real estate so was soon established as a data centre hub with the likes of Global Switch and Telehouse.

- 4.5 The City market has been established for the financial sector in London. Many institutions previously had their primary data centre in their office with a Disaster Recovery (DR) facility in either the Docklands or a 3rd party data centre in the City (such as Interxion or Telecity). This is a very strong market due to introduction of low latency critical applications and the need for synchronous replication of these applications.
- 4.6 The extension of the London Market towards places such as Slough and beyond was established in the early 'naughties' and was primarily established due to the collapse of the Twin Towers in the US and their lack of apparent DR back up of the critical applications. This coupled with the enhancements in technology enabling longer fibre runs to provide the latency needed to run the applications. Since then, Slough has become perhaps the single most populated sub market in the London region.
- 4.7 The Docklands and City locations are dominated by retail offerings, with the exceptions of the larger deals done by the early entrants to the data centre market in Global Switch and Telehouse. I now rarely see large tranches of space being taken in central London. This is due to a number of reasons - firstly pricing; the Docklands and City pricing is a lot more expensive than the rest of the outer-London Market and secondly, corporate occupiers are now looking at their footprint strategically, splitting out the latency specific loads (and placing them where they need to go) and moving the remainder of the of the load to cheaper, diverse locations (which are usually synchronously replicated with the low latency IT load), therefore, creating an efficient, well managed portfolio.
- 4.8 Currently the London data centre market is focused around the City, Docklands, Slough and wider London area. The corridor to Slough that currently hosts many data centre operators could expand further out. The radius of the London Market is generally perceived to be around 35 miles (approx. 55Km) distance from The City where tenants locate for low latency and operational convenience. The boosters that boost signal across fibre lines are what cause the delay in latency. In illustrative terms, the information reaches each booster and is then pushed along the fibre until it reaches the next booster:



- 4.9 If these boosters, known as ‘repeaters’ or inline amplifiers’ become less encumbered in the future and modified for increased speed, this would allow information to travel a further distance with the same latency. This would mean that the data centres can be located further away from London without suffering from technological issues; meaning that sites such as the Site would become viable as an option to serve London.
- 4.10 A further point in the expansion of the wider London data centre area is that the location of your operational team to the data centre (currently seen as +/- 45 minutes) becomes less important when a higher proportion of your IT is located in the cloud.
- 4.11 Latency is one of the crucial factors when considering where to locate your data centre space. Some types of corporate sectors, such as trading platforms, require as little latency as possible and can be deterred by milliseconds worth of difference in latency. In context, if you are a trading house you need the signal from your trading platform to reach the data centre, where the operation is physically performed, and get back to you in as little time as possible. Any delay can have a big impact on the trades you make. In the current climate, Saunderton would be considered too far away to offer sufficient latency speed. However, given the advancements in technology, the distance from London to Saunderton will be less of a concern as the latency time reduces, therefore making the site more attractive to a wider tenant base.
- 4.12 In context, using the Gyron example from earlier; Hemel Hempstead is similarly to Slough, located approximately 35km from the City of London. Gyron will look to bring to market a large amount of data centre space which would not have been available in the centre of London. Gyron will be in a place to compete with the ecosystem of data centres in Slough, which has become the most populous area for data centre hosting in London. Furthermore, Ark Data Centres facility at Cody Park, in Farnborough, which is approximately the same distance (55km) from the City of London as the Site has recently been awarded the crown Hosting deal to facilitate IT services for certain government departments.
- 4.13 This further exemplifies that facilities located in the outskirts of London can compete with more centrally based data centres today, and will do so even more in the coming years. Ark have benefitted from the London Market being extended further out in recent years, having

launched its facility in Farnborough approximately three years ago. Ark have a facility of over 15MW at the site, split into different phases and have been successful at letting space at the site to requirements that were targeted at the London Market. Even further out, Next Generation Data in Newport, Wales has successfully let space to a hyperscale cloud company which has located the “paired” data centre in North London which demonstrates the trend for increasing distances between data centres which could effectively extend the London Market area to include Molins.

## **5.0 E-SHELTER'S DATA CENTRE PROPOSAL**

- 5.1 The Site is a former cigarette machine producing site on Haw Lane, Saunderton, which was owned by data centre developer, E-shelter (UK) Ltd. The Site benefitted from planning permission for the erection of a data centre campus, however this permission had not been built out (demolition of former buildings has technically implemented the consent).
- 5.2 The initial plan put in place by e-shelter was for 50,000SqM of white space across four separate buildings. Three of these would have been 10,000SqM in size and one would have been 20,000SqM. If we assume a modern average power density of 1,500 watts / SqM then the scheme would provide around 75MW of IT capacity. e-shelter were looking at a slightly lower density, which would allow 65MW of IT capacity on the site with 100MW of gross IT power coming into the site. I understand that this power capacity would have cost in the region of £41million\* to implement.

\*KTA Review of Electricity Infrastructure Report dated August 2016, (Appendix C).

- 5.3 E-shelter had interest from occupiers in the site prior to selling the site including:
- 5.3.1 A large systems integrator which was interested in being the anchor tenant to the site but during the discussion process went through a merger which led to them not coming through as the anchor tenant for strategic reasons; and
- 5.3.2 A large bank that also showed interest in the site but eventually decided to build on land they already owned.
- 5.4 These two examples show that there was interest in the overall scheme and if e-shelter had managed to sign one of these two potential opportunities, they may have been able to use and anchor tenant to draw in more customers. As it happens, they did not manage to sign

and anchor tenant which would have been instrumental in the overall decision to sell the site.

## **6.0 THE SITE'S DATA CENTRE DEVELOPMENT POTENTIAL**

6.1 In looking for a suitable site to build a data centre you should consider power – planning – fibre – physical risks as the key parameters for decision making. CBRE has acquired more data centre space in London and the South East than any other advisor and we have not been able to find a 'perfect' site, suggesting that every site has limitations in some way. Thus, when looking at viability for a data centre, one should not discount a site that is not perceived to tick every box as those sites seldom exist.

6.2 The fact that E-shelter, a well know and long established data centre developer, were planning to develop the Site for data centre use and went as far as to purchase it and start development gives us a good degree of confidence that the power, planning, fibre and risk issues will be commercially viable.

### **Power**

6.3 I have reviewed the KTA Power Supply Report (Appendix C) and note the following points in particular:

6.3.1 Section 2.2 SSE responded via email "confirming that nothing has drastically changed to the networks associated with the proposal and it remains a viable solution assuming the client's requirements are the same."

6.3.2 Section 2.2 "SSE also stated that the level of investment has changed and a rough budget cost would be plus 10% of the original 2008 proposal.

6.3.3 Section 2.3 "Current preliminary budget costs from SSE with 10% uplift £45,015,907.00."  
Section 3.1 "Conclusion - Following the discussions with SSE and their response the original proposal is still a viable solution for the proposed development site should a Data Centre proceed. A new Direct Connection Application will be required to restart the process for obtaining the power supply due to the time that has elapsed on the 2008 proposal."

6.4 The total cost of the new 100MVA supply equates to £450,159 per MVA which is comparable to several successful developments I am aware of. Also I note that as confirmed in the KTA Report (Appendix C) at paragraphs 2.1.2 and 2.2.4, the new supply can be provided in stages which would be better commercially than having to pay for the full supply at day 1.

## Planning

- 6.5 Planning Application No. 08/05740/FULEA was made to Wycombe District Council and approved on 27th November 2008. I have not reviewed the planning documents in detail but I understand conditions which would significantly affect the scheme's commercial viability given that e-shelter had managed the process to an advanced stage including demolition of former buildings and that they had technically implemented the consent.

## Fibre

- 6.6 The Powys Hughes Connectivity Report (Appendix D) concluded that *"subject to the agreement of suitable budgets (and these will be refined by the ITT because actual route surveys will have been undertaken to establish lengths and costs), e-shelter UK could procure diverse optical fibre connectivity to the site in time for the completion of the first phase of development, currently estimated to be end 2010. A minimum of three diverse routes to the site could be provided across two or three telecommunications network carriers."*

I would not expect the availability of fibre to have reduced since the report was written in 2009 and indeed I would not be surprised if more fibre was now available in the area.

## Physical Risks

- 6.7 I have not seen a specific risk report but assume because of experienced data centre developer e-shelter (UK) Ltd purchasing the site and from our own knowledge, that there are no risks such as flood, flight path, explosion, train derailment etc. that would be detrimental to the site being developed for data centre use.

## Other Considerations

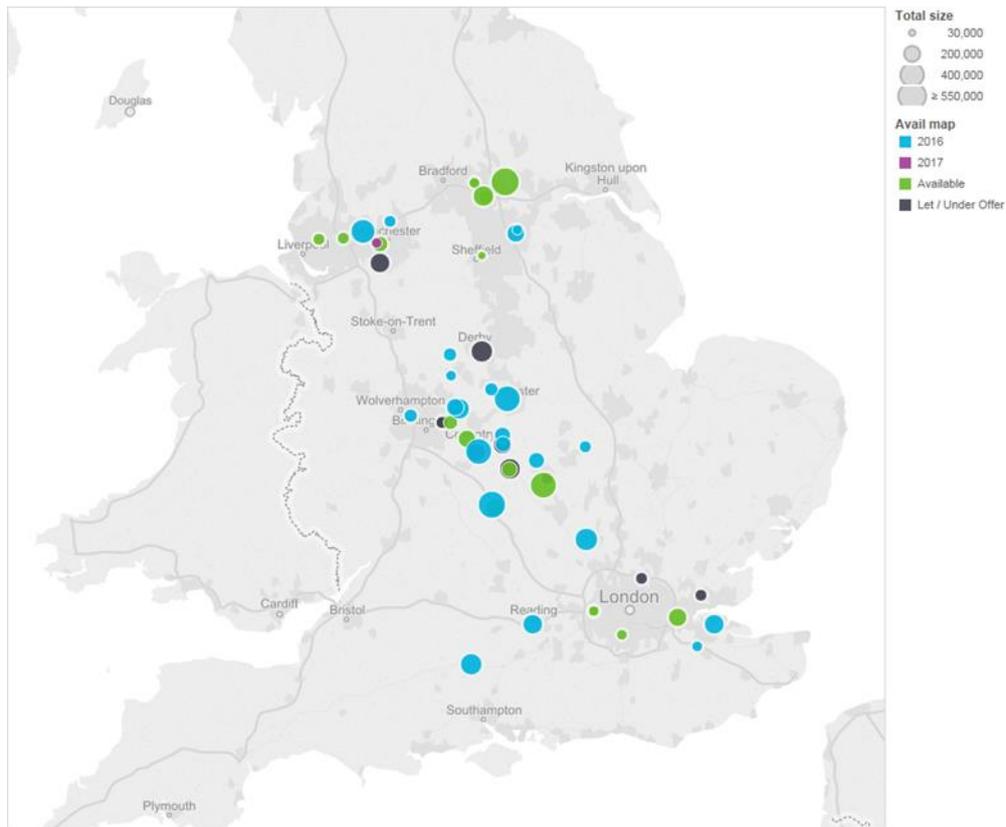
- 6.8 I have taken into account the following factors when determining the success of the Site for data centre use:

6.8.1 There has been previous interest in the Site from within the data centre industry. CBRE, on behalf of a large global data centre developer and operator, has previously bid for the site. Therefore, I am aware that there was interest from at least one other data centre developer for the site when e-shelter purchased it;

6.8.2 The Competitive landscape in the industrial sector within London and the South East makes it difficult for data centre developers to secure sites as they have to compete with industrial developers who are less encumbered by issues such as power,

planning, fibre and low risk environments. Any site which has been provisioned for data centre development, such as the Site will, therefore be carefully considered by data centre developers and end users. If you were able to secure the HV power to the Site then I would envisage that this would make the Site attractive as suitable provisioned data centre sites will become harder to acquire;

- 6.8.3 The map below shows the limited number of sizeable logistics development schemes likely to be made available for London and the surrounding region (sizes in SqFt). Given the large size of the Site I expect there to be very few choices for any occupier requiring a large-scale site in the London Market.



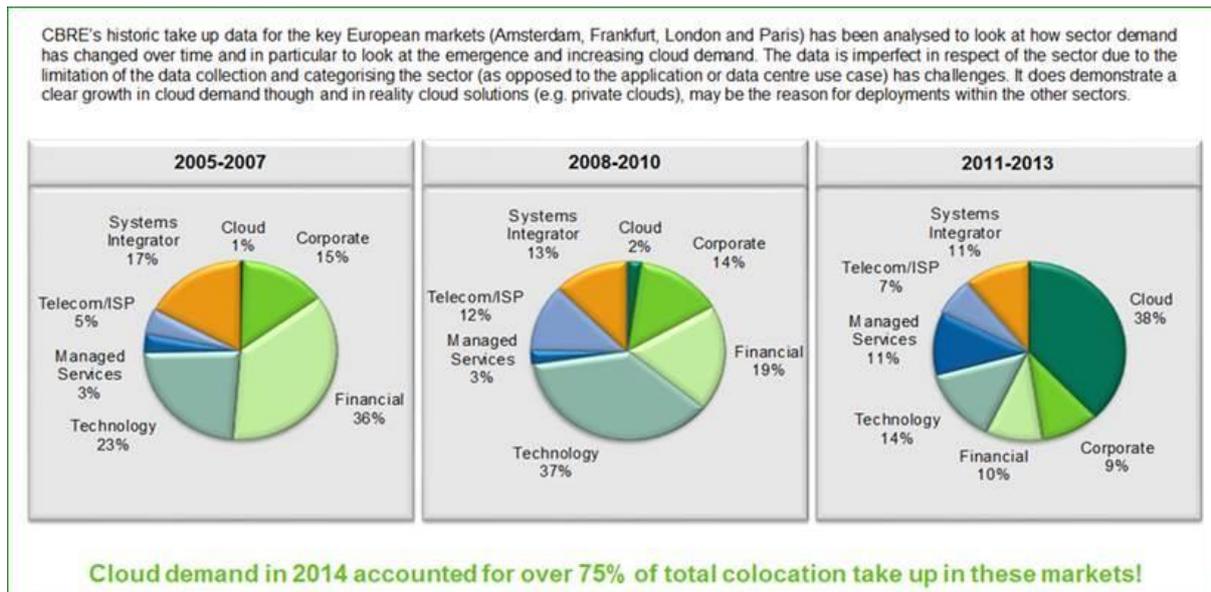
6.9 In addition to this lack of new logistics supply, the overall radius of the 'London Market' is likely to expand in the coming years due to improvements in the technology that affects latency. This is laid out in more detail below but is a result of the process of a signal going through fibre to its destination being less encumbered along its route.

6.10 In addition to the above points surrounding the expanding radius of the London data centre arena, having a fully powered IT shell would prove advantageous as fears of power security in the London area continue to be a theme amongst commentators. In January 2015 the World Energy Council downgraded the UK's energy supply rating from AAA to AAB under its annual "trilemma" index. This index grades countries on their ability to offer secure, affordable and sustainable energy supplies. This added further weight to the increasing lack of security in the UK's energy supply. The Telegraph reported that The National Grid has confirmed that next winter is the first time since the published data system began in 2001 that it has not forecast a surplus margin of spare power plants in the UK market, and has instead forecast "negative margins".

(Telegraph: 26/02/2016

<http://www.telegraph.co.uk/news/earth/energy/12175367/UK-energy-supply-forecasts-into-the-red-for-first-time-next-winter.html> ).

- 6.11 At the time when E-shelter had the site, it was marketed for the financial services sector and large banks were identified as tenants for the site. This marketing strategy was at a time when financial services firms, who had historically been the dominant sector in the industry, had begun to see their proportion of overall colocation demand start to diminish with technological firms becoming the dominant force in the sector. Since then, the amount we use technology within society, especially web-based applications (such as social media) has exploded and, as a consequence, cloud firms are dominating demand in the data centre industry.
- 6.12 These hyperscale cloud and IT Infrastructure firms (such as Microsoft, Amazon Web Services and Google) are acquiring much more data centre space than financial services company would ever have been able to and are doing so on an unprecedented level across Europe. These firms will struggle to find adequate data centre space if they continue to acquire space in the same way as they are doing, and the signs suggest that they will continue to do so.
- 6.13 If the Site was to acquire the full HV power planned by the previous data centre developer that owned the site, then I envisage that this would make the Site more marketable and add to its potential success as a data centre location. There is substantial demand in Europe from the hyperscale IT Infrastructure firms listed above for large-scale powered sites to build their own data centres in key markets. I have seen this trend in markets around Europe, especially Dublin, and so if these types of firms do move to the London Market and run their own data centres I envisage that they will find it difficult to find sites of a suitable size with adequate power, and as such the Site would prove to be an attractive proposition. In context, Microsoft's own data centre in Amsterdam is outside of Amsterdam city centre which shows that being in right in the centre of a major city is not an absolute requirement.
- 6.14 The graph below shows data centre demand in Europe moving from a financial services focus to heavy demand from cloud services and providers in recent years:



6.15 As demand in the European markets continues to be dominated by IT Infrastructure and cloud firms the requirements of these firms are different to what drove the financial services firms 10 years ago. Cloud-type companies can be more flexible in where they choose data centre space as they are less restricted by both governance and structure for location. If this trend continues in the coming years I envisage that the geographical positioning of Molins would be less restrictive to this tenant base.

6.16 The Global hyperscale cloud providers, unlike the financial services type firms that shaped demand 5 – 10 years ago, are extremely aggressive in the amount of data centre space they look to acquire. These companies are taking huge amounts of data centre space in major markets in Europe. They will take colocation space in data centres operated by specialist firms and also acquire large sites which they will operate themselves. It is reasonable to suggest that some of these hyperscale cloud companies which operate their own facilities across Europe may look for a large site in London to support demand in the City. This may become increasingly imperative if data protection regulations become more rigid.

6.17 Should this level of demand come to London, as I mention above, there are not many sites in London and around the South-East that would be able to facilitate such a requirement. The Site, which could offer a powered shell, would be in a competitive position to win this type of requirement. As power security becomes more of a concern, there will not be many sites that could offer a fully powered shell in this area of the UK. Furthermore, the

increased strategic procurement processes that some firms operate with could benefit the Site.

- 6.18 In context, a large cloud provider has recently taken a sizable chunk of space at a data centre in Newport, Wales, due to its need to have a data centre site in the 'London' area with redundancy provided by a site further away i.e. in Newport. The Site would be in a strategic location for tenants who may have a primary site in the central London Market but seek a second site in the same geography but outside of what would conventionally be considered as 'London'

## **7.0 CONCLUSIONS**

- 7.1 My conclusions as to whether there is a prospect that the Site / e-shelter scheme would be taken up for data centre use, are based on the following factors:

### **Demand from Cloud Service Providers**

- 7.2 The types of organisations acquiring vast amounts of data centre space at the moment are the Cloud Service Providers (such as Microsoft, Amazon Web Services and Google). These organisations choose to collocate in third-party facilities and also build large 'built-to-suit' facilities across Europe. None of these organisations has a sizeable end-user facility of their own in the London Market. I am aware of at least one of these companies looking for a large site to develop for data centre use and, subject to the provisioning works being completed, I would expect the Site to be given due consideration.

### **Availability of schemes**

- 7.3 If these Cloud Service Providers do look to build schemes in the London Market, they will require large powered plots to build their data centre facilities. There is an increasing lack of schemes in the London and South East area that would suit this type of requirement and these will only become more restricted in the coming years. This means that there may not be many viable alternatives to the Site in the coming years.

### **Distance from London**

- 7.4 The Site is approximately 55km from the City of London. In data centre terms we may still consider this distance to be on the edge of the London Market. Ark Data Centres have a successful data centre scheme in Farnborough, which is also around 55km from London. Ark is an established operator in the London data centre market and has been able to compete

with other providers in the market in a successful manner. Furthermore, the Slough Trading Estate (approximately 35km from London) has become the most populated area for data centres in London. The extra 20km to Molins will have less impact in the future as technology improves to reduce latency times and Edge technology also improves and thereby allows data centres to be located further from the centre of London.

### **Power Supply**

7.5 My belief is that power security in the UK will be more challenging in the years to come, so that having a power supply secured and available will create a competitive advantage for any site looking to attract a data centre end user.

### **Prospective Tenants**

7.6 The market is primed for continued demand from the hyperscale IT Infrastructure firms (such as Microsoft, Amazon Web Services and Google). These types of end-users, due to the sheer amount of data centre space they are taking, would be viable tenants for the Site. As illustrated in the report, the Site would suit the requirements of these companies and there may not be many alternatives in the London Market in the medium term (5 – 10 years).

### **Likelihood of Development**

7.7 Given the above points, my view is that a data centre is feasible at the Site and there is a realistic possibility that a data centre could be built out on the Site in the medium term (5 – 10 years).

## APPENDIX A

### GLOSSARY OF TERMS

*Data Centre* – A facility used to house IT systems and associated components including data processing, telecommunications and storage systems. It generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (e.g., air conditioning, fire suppression) and various security devices. Large data centers are industrial scale operations which can use as much electricity as a small town.

*Carrier Neutral Hotel (CNH)* – A Data Centre where the operator allows any telecommunications carrier to connect into the facility and to connect to third parties within the facility, not discriminating between different carriers and charging only nominal fees for interconnection. The Carrier Neutral Hotel operator usually has one of two distinct offerings: Wholesale Colocation and Retail Colocation.

*Retail Colocation / Retail Offerings* – The letting of small unit sizes of fully fitted space in a data centre - typically renting individual racks or taking up to 200kW of IT power. Retail Colocation is a similar concept for housing IT equipment as Serviced Offices are.

*Threat Stock* – Data Centre colocation space offered by companies whose primary business is not as a data centre colocation company; such as telecommunications firms or enterprises who seek to dispose of surplus data centre capacity.

*Hosting Space* - Space in a data centre or building that can be used to host IT infrastructure.

*Distressed Data Centre Opportunities* – Data centre facilities being sold as distressed assets for a cut-down price.

*Shell stock* – Unfitted data centre space which has been provisioned for data centre use and ready to be fitted out.

*Shared Infrastructure Platform* – IT infrastructure in a data centre that is shared by different organizations.

*DR (Disaster Recovery)* – A facility used to store back-up IT systems for security if any data should be lost from the primary storage site.

*Low Latency Critical Applications / Latency Specific Loads* - IT communications that are dependent on the speed of returning data to and from the data centre.

*Synchronous Replication* - The process of copying data in real time over a storage area network (SAN), local area network (LAN) or wide area network (WAN) so there are always multiple up-to-date copies of the data.

*White Space* – The amount of space in a data centre that is usable for the storage of IT equipment.

*Systems Integrator* - A company which markets commercial integrated software and hardware systems.

*Logistics Warehouses* – A shell building that can be used for multiple purposes.

*The Cloud* - Cloud computing is a general term for the delivery of hosted services over the Internet.