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Social and economic factors in the re-use of derelict industrial buildings

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All industrialised countries are faced with a stock of increasingly aging industrial buildings, many lie derelict and decaying. The stock represents a history of growth and manufacturing that for many countries and cities are proud reminders of places in history and cultural growth. However, with derecllation and decay these buildings become eyesores, prone to vandalisation presenting a challenge for successful social and economic re-use. Many Governments in industrialised countries have encouraged a policy of Urban Regeneration and since the late 1990s there has been a trend towards sustained economic growth, this has lead to the re-use of much derelict industrial property. This research investigated the balance of social and economic factors necessary for the successful re-use of derelict UK industrial buildings and found that whilst developers consider economic factors primarily, social factors do impact on the re-use of industrial buildings as a result of changes in Government policies. In the future, social factors are likely to be increasingly significant in decision making regarding the scope and extent of re-development projects.

There are compelling economic, social and environmental arguments for adaptive re-use. Re-using buildings makes sense, re-use costs are approximately 50% to 80% of new build costs, with the added benefit of access to grants for using industrial property (Highfield, 1987). Reduced construction periods result in lower finance costs and interest repayments to developers. The social benefits associated with re-use of derelict buildings include regeneration and establishment of new businesses and infrastructure including retail outlets, provision of education, health services and entertainment venues. Environmentally the argument is that embodied energy invested in the building is utilised in re-use and given the links between energy consumption during construction and operation of buildings, a method that reduces consumption is positive. Furthermore, with the drive to inner city living industrial buildings often are located in desirable areas, such as canal sides.

Stratton (2000) noted the UK was the first country to experience the industrial revolution and the first to suffer decline in manufacturing as the service economy developed (Ball, 1997:36). The Urban Task Force (1999) concluded under utilized and empty buildings blighted urban areas and wasted resources invested in towns and cities. The need to deliver 4.4 million new homes in the UK by 2016 has lead the Government to look at using Brownfield sites and re-using derelict industrial buildings to meet this need. Similar brownfield site opportunities exist in Australia.

Given the amount of re-use undertaken in the North of England, particularly in cities such as Manchester, Leeds, and Sheffield, this research sought to investigate suitability for re-use, to determine the social and economic factors affecting re-use and to ascertain key stakeholders' views regarding the drivers for re-use of industrial buildings. The researchers omitted environmental factors from the research, though environmental aspects are acknowledged however, given the resources social and economic issues only were included.

Characteristics of industrial stock

Fothergill et al (1987) estimated 3% of total building stock in Yorkshire and Humberside or 1,296,000m² comprised vacant industrial space. From 1970-90 employment in manufacturing fell from 8.1 to 3.1 million (Ratcliffe & Stubbins, 1996). By 2003, 295,929m² of empty stock existed in the region. Though original or similar use is the first preference of some (Pickard, 1996) current manufacturing pro-
cesses do not always make such re-use feasible (Ball & Pratt, 1994). Some buildings do not lend themselves to re-use due to unusual floor plans (Marsh, 1983), physical issues impose limitations and each scheme is unique (Foley & Green, 1986:8). Whilst Scratton (2002) felt locations were often desirable in former industrial areas, Gause (1998) stated that locations were often poor and that developers preferred a blank canvas to re-use.

In Sheffield re-use of industrial space did not occur during the 1980s due to a major economic downturn that occurred after the decline of the mining and steel industries. By the 1990s many poor quality dilapidated industrial buildings which had been empty for long periods existed (Sheffield First for Investment, 2003:15). URBED (1987) and Markus (1979) refer to the ‘blight and decay’, vandalism and neglect associated with empty buildings and escalating redevelopment costs the longer the building stands empty (Highfield, 1987).

Social issues in re-use of derelict buildings

Cultural significance is derived from the ‘functions, activities and practices associated with a place’ (Teague, 2001:31), substantiated by Hawes (1998) who claimed a direct relationship between quality of life and proximity to historic environments. While Eley and Worthington (1984) lament the loss of quality historic buildings during the 1960s when post-war development was widespread. Gause (1996:4) felt historic buildings were the glue, a cultural and visual fabric that keeps communities intact, occupied and vital. The benefits derived from social well-being and the importance of the association with ‘old places’ is well documented (Douglas, 2002; Cantacuzino, 1975) and includes psychological reassurance, a sense of heritage and identity.

UK society like Australia has changed, from a stratified to a classless society; from a work ethic to a leisure ethic (Stratton, 2000, Gause, 1998). Trends in city living encourage people to integrate live-work, which has been brought about partly by changes in family structure requiring more one and two bedroom units. The provision of housing through the re-use of derelict industrial buildings offered hope for social regeneration to communities devastated by the loss of traditional industries (Douglas, 2002). For Latham (1996), developers need to seek a wider range of uses to make innovative, dynamic urban environments without diminishing the past, the interchange between the ‘changing and enduring’ (Henehan et al, 2004:55).

The most important factors in economic viability of a scheme are market trends and stability in connection with capitalisation, inflation and interest rates

Economic issues in re-use of derelict buildings

An overriding issue for developers is the need for a return on investment, and without return no redevelopment occurs (Ratcliffe & Stubbs, 1996, Gause, 1996). URBED (1997) and Eley & Worthington (1984) argued that the romanticism and emotion associated with heritage conservation needs to be removed with the focus on the economic asset value in re-use a view supported by the Scottish Civic Trust (1981) who claimed savings can be made through re-use of existing buildings. The most important factors in economic viability of a scheme are market trends and stability in connection with capitalisation, inflation and interest rates (Cadman & Topping, 1996). If inflation and interest rates are low, the property market is rising, confidence will be high encouraging developers into the market. Douglas (2002) claims higher interest rates encourage re-use due to shorter redevelopment periods leading to shorter borrowing periods.

Cadman & Topping (1996) and Ball & Pratt (1994) state that low site cost is a positive economic factor, though Gause (1996) notes that low site cost is important because of additional costs involved in Brownfield and re-use such as possible contamination issues and requirements by legislation to use certain materials and conform to aesthetic guidelines. Stigma issues in contaminated sites may lead to finance and investor issues for developers (Syms & Knight, 2000). Financing can be easier where risk is spread through a mixed use redevelopment (Stratton, 2000; URBED, 1997; Ball, 1996; Rowley 1996:30). Another developer incentive is the availability of grants (Stratton, 2000) however grants can be detrimental through criteria which render the scheme unviable (Latham, 1996) and time frames that delay schemes and lead developers to ‘miss the market’ (Ratcliffe & Stubbs, 1996).

The balance between conservation and regeneration is affected by the source of funding (Cantacuzino, 1975; Stratton, 2000) and funder aspirations for schemes (Cadman & Topping, 1996). State funded schemes are different to privately funded for profit schemes. Local Authorities play a crucial role in awarding planning permission and are more receptive to re-use and the economic and social benefits for an area associated with heritage property (Ball, 1997:36). For Teague (2001) and Rowley (1996:31) the goal is to use the social value embodied in historic buildings to promote economic revival and create vibrant inner cities through integrated approaches. Economic and social factors are important with the social aspect beginning to play a larger role in decision process.

Research design

The nature of the research question determined the approach as the researchers sought to determine the social and economic factors affecting the potential for re-using derelict industrial buildings. This is qualitative research, subjective in nature, emphasising meaning, experiences and description (Naoum, 2002:40) in this case in the context of re-using derelict industrial buildings. The study was exploratory in nature in order to ‘diagnose a situation,
screening alternatives and to discover new ideas' (Rudstrem & Newton, 2001:86).

This study adopted a hermeneutical approach to raise awareness and to provide a deeper understanding of the issues as written in texts and journals. The information generated by the desk-top study was incorporated into semi-structured interviews which were conducted with professionals engaged in the re-use process. The primary data collected used a phenomenological approach in interpretation to gain a deeper understanding of the issues. Interviewees were given anonymity to encourage an open discussion of sensitive issues. The interviews provided an opportunity to interpret non-verbal expressions and allowed greater understanding than questionnaires (Naoum, 2002) being tape recorded to allow the interviewer to follow up responses.

Re-use is a global activity, but to produce rich data it was decided to make the research geographically specific; an important factor for reliability (Robson, 2000:240). South Yorkshire was chosen because of researcher access to information and interviewees and the amount of re-use of derelict industrial buildings. Selective sampling identified appropriate interviewees (Naoum, 2002) and the population was derived from knowledgeable planners, professionals, academics, developers involved in re-use projects in Sheffield, and this range captured a wide perspective of social and economic issues. They are referred alphabetically below.

The research findings

Regarding suitability for re-use, all interviewees confirmed Foley & Green's (1986) claim that each development is unique and that an assessment of each building should be done based on its own merits. Suitability is a factor all consider key when evaluating an industrial building's potential for re-use and suitability for conversion depended on several factors. Interviewee D claimed it is "horses for courses" and suitability depends on what it is, where the building sits and how you access it. Interviewee C agreed claiming that location is the primary consideration for re-using industrial buildings. Interviewee A and D stated there is a large percentage of industrial sites in undesirable locations of South Yorkshire that would benefit from demolition as there is less inherent value and potential for re-use. Interviewee C suggested that offering them as Brownfield land for development could generate economic growth in those areas.

Interviewee A and D suggested demand for the converted premises and the end market/user plays a large role in determining how suitable the building is. D claimed that occupiers with fewer financial resources have to "make do" with second-hand refurbished accommodation; these buildings appealing to a "limited market". In contrast, interviewee B claimed demand for the conversion of the heritage style industrial buildings to residential apartments is increasing with the fall in household size and changing life trends, reiterating Stratton's (2000) and Gause's views (1996). The factors above are linked; location and property type directly affects the demand and it's suitability for re-use. Gause (1996) stated that location follows market demand in traditional construction but location and market are both fixed in re-use development and this demonstrates why finding the right building in the right location is key for profitable re-use to ensure there will be demand for the project.

Interviewee A and B considered the physical suitability as crucial and how well the proposed building lends itself to the new use. Interviewee A agreed with Foley & Green (1986) saying that there is no "hard and fast rule" for assessing how suitable an industrial building may be and D agreed that there is "not one way of looking at it". Interviewee A considered the economic suitability of conversion i.e. "an assessment of suitability should be based upon market conditions, the economic cycle, interest rates and inflation" comparing with Cadman & Topping (1996), and Ratcliffe & Stubbs (1996). B suggested Developer creativity and imagination could bear on how suitable a functionally obsolete industrial building is for re-use. B stated it is "easy to see the negative side" reiterating Gause’s (1996) statement that these buildings need to be viewed in a different, more positive context and Latham (1996) who said a greater breadth of creativity is needed to maximise potential. Based on
The data, the Figure 1 below illustrates the factors affecting the suitability of industrial buildings for re-use, it is concluded that location and the type of property will have the biggest influence.

The influencing factors were ranked by interviewees in order of importance as follows.
1. Location.
2. Type of property/Physical characteristics.
3. Access.
4. Demand/End market.
5. Economic conditions.
6. Developer’s vision.

The Social and Economic Factors Affecting Re-use Potential

The balance of social and economic factors for successful re-use is weighted in favour of economic factors, but the social aspect is beginning to feature more prominently. All agreed that the primary concern of re-use is financial viability. Interviewee A claimed, “It is the market that drives it. Simple”, B suggested that it is “90%, if not more” and C concluded “100% economic. I would not believe [developers] would look to social factors at all. It all boils down to money”. This was in response to the question; what percentage split is given to social and economic factors in the decision to re-use? Given the unanimous responses in favour of economic factors, it was necessary to probe to ascertain when and why the social factors are recognised.

Interviewee D claimed that private developers “do not factor in the social side very often” in the decision, the point was made that this becomes more important if the project is to be externally funded. Interviewees C and D stated that big institutions do not re-use because they dislike ‘messy’ leases, perceived increased risk and the fact they want a secure return on investment which re-use cannot always guarantee because they are not “squeaky clean”. Private developers and investors will re-use suitable industrial property rather than institutions and thus the likelihood of external financial requirement is increased.

Interviewee D explained where funding is concerned, developers have to “toe the line” according to the source of funding and will have constraints. For example, the developer “may have to tender all works and not appoint contractors” or that as part of the development “local infrastructure may have to be improved” for community benefit. A stated funding plays a large part in the outcome of the project depending on client involvement with the project and their objectives i.e. “short term or long term gain” or, if publicly funded a “public agenda” will be the driving force. The balance shifts in favour of the social factors because, as interviewee B claimed, planning policy pushes and encourages developers in the direction of re-using old buildings in the interest of sustainability, regardless of the end use.

The balance of social and economic factors for successful re-use is weighted in favour of economic factors, but the social aspect is beginning to feature more prominently.

Planning permission, is key in re-use and B stated that Local Authorities are more driven by the social side i.e. “who might live there, what facilities people require in terms of schools, public transport, what their impact might be (positive/negative) and make decisions accordingly”. The issue of planning permission meant that to achieve successful developments the social factors have to be considered in more detail when assessing an industrial building’s potential for re-use. Interviewee A and B suggested that planners and developers need to do more “joined up thinking” looking at the long-term benefits i.e. “10, 15, 20 years of a scheme as part of regeneration”, whereas interviewee C considered that although there have been improvements in encouraging regeneration as part of government initiatives; that “this has been led by policy rather than changes in planning law”. Interviewee B stated that planning departments are keen to approve schemes that intend to “locate facilities within the existing urban area” i.e. on public transport routes for the betterment and development communities and developers cannot ignore this if they are to secure the right building and obtain planning consents.

The perception of old industrial buildings as a source of housing was a social factor that interviewees A and C commented on in contrasting ways. Respondent A claimed that a positive aspect of re-using these buildings would be the “social perception of being in a building which is of historic value”, whereas interviewee C argued that it is hard to find occupiers for these types of re-use projects because of people’s perception of old industrial property as “dark”. Interviewee A enhanced this argument, saying “people look for things that are efficient, new...they are not interested in something built in eighteen or nineteen something...they have a completely different perception nowadays”.

Location and a proposed scheme’s proximity to local services are social factors that A and C agreed affect re-use potential in South Yorkshire. Interviewee A claimed that, regardless of how strong the economic argument for re-use i.e. a “wonderful economy”, it would not be viable if the scheme was in the wrong place and could not be reached by social groups, and viability in relation to location is crucial; “you have to have the social need. It needs to play a part in the community to create integration”. Initially the data revealed that economic factors greatly outweighed social in the split between the two affecting re-use potential, however, when was probed, social aspects became more apparent and important.
The Social Advantages and Disadvantages of Re-use

The social advantages of re-using industrial buildings greatly outweighed the disadvantages with all respondents noting wide-ranging social benefits compared to very few negative issues. Maintaining the region’s industrial heritage by re-using buildings is, interviewees B and C agreed, advantageous. This does not apply to the big shed buildings eligible for re-use in the region, this social gain applies to the period industrial buildings. Interviewee B stated that “it maintains our history, which is important” and interviewee A stated that when attention is paid to the qualities of buildings, “industrial heritage is protected, which is important because of its value in the landscape”. However, putting these buildings to use and achieving occupation is the factor interviewee B considered really positive. “It’s not a job for the public sector to create a set of museum pieces, it’s a task for the wider economy to try to find viable new uses for them” and enhances the opportunity to achieve sustainable urban environments through re-use. Furthermore because of value in the landscape, pressure groups lobbying against re-use were considered as a social drawback to re-use. Interviewee A claimed that if a building is particularly enjoyed by the community there could be problems; “it depends on the sensitivity of the building. There is always a protest group around the corner”. Interviewee A discussed a re-use project being undertaken that had encountered such a pressure group, saying, “I think they have valid reasons because they are genuinely concerned with the heritage of the property.”

There were contrasting views on adaptive re-use of these buildings, particularly if residential accommodation is the proposed end use, the way in which they would integrate with the surrounding community. Interviewee A, B and C believed that re-use integrates communities, however, interviewee A claimed that re-using industrial buildings for residential apartment blocks create “gated communities” i.e. “all access is controlled at the front door, so once you are inside that building, you are not part of the community”. Interviewee B continued that an advantage of re-using buildings for residential use is that it provides diversity in the market and that “there is some fantastic accommodation”. Although the data showed a disadvantage of re-use for residential, it did confirm a key advantage; the potential for providing housing (Douglas 2002). With the UK government mandate to provide 60% of the 4.4 million new homes by 2016, utilising Brownfield potential and planning policy guidance to encourage the re-use of buildings residential uses for suitable old industrial buildings will be more in evidence.

Interviewees C and D agreed that finding commercial uses for old industrial buildings would be socially advantageous as it offers the chance to create employment and promote regional regeneration. Interviewee D highlighted increased volumes of traffic within urban areas as a possible disadvantage as a result of this. Figure 2 illustrates the findings of this section and shows that the social advantages of re-using old industrial buildings greatly outweigh the disadvantages.

Economic Advantages and Disadvantages

The economic disadvantages outweighed the advantages of re-using old industrial buildings and that these disadvantages correspond with the findings of the section Social and Economic
Factors Affecting Re-use Potential. An advantage Interviewee D noted is that competition for the acquisition of an old industrial building is reduced because "the messier an opportunity the less people want to get involved" and this improves the chance of securing the space but this is becoming more difficult in Sheffield, as Council and government agencies are "land banking" many industrial buildings i.e. buying now for future use.

Interviewee D used the term "Cash Cow" to describe old industrial building i.e. inexpensive to acquire, and that all the space can be let to different users, particularly start-up businesses, to generate the maximum amount of revenue through mixed use. Interviewee A added that providing the accommodation could be 60% cheaper than a speculative new-build and because there is potential to obtain planning consent quicker, it reduces the project length and the "cost of borrowing accounted for in the financial appraisal". Interviewee B claimed that re-using old building for residential purposes can have positive effects on surrounding property prices and "raising the profile" of that area. Interviewee C and D stated that the developer, whether residential or commercial would attract people to the area and have a "positive knock-on effect for local businesses" and that the "positive economic feedback" to the surrounding area would be a big advantage.

The financial risk involved in re-using old industrial buildings was a disadvantage that all interviewees highlighted. Interviewee A and B commented on unexpected costs due to the lack of opening up works that can be undertook in physically assessing the property and "anything you can't see" means uncertainty about costs due to the need to estimate. Contingencies for re-use development would have to be double that of new-build. Interviewee C added they can be "difficult and challenging to work with" and unforeseen work increases time on site and lowers financial viability. Interviewee D, argued that if the right building is found i.e. location and type, the risk could be less than a speculative new-build because the raw materials are already in place, making the end product quicker to provide.

Interviewee D commented on the increased "life term costs" of re-using industrial buildings because they are "management intensive", difficult to asset manage because of repairs due to the building's age and condition and, that the developer has to be prepared to "roll your sleeves up" and that very few developers are prepared to do it. Funding restrictions were highlighted by respondents C and D as a disadvantage of re-using, and the "time lags" and effort involved in obtaining them adding to "increased uncertainty", however, interviewee B claimed that because of the proven success in the last ten years of the conversion of old industrial buildings to residential apartments, larger institutions are now keen to get involved "because it is a formula that appears to work". Figure 3 illustrates that economic disadvantages marginally outweigh the advantages, however, these are key limiting factors to re-using old industrial buildings in the minds of the respondents.

Conclusions

The aim of analysing the economic and social factors affecting the potential for re-using derelict industrial buildings was fulfilled by analysing primary and secondary data. Questions for the interview schedule were based on the literature review and linked to the research aims, kept the primary data collected relevant and valid. All interviewees were unanimous in agreement that financial viability is the primary and only concern. However, after deeper probing by the researchers a combination of the source of funding and planning policy guidelines is making developers have to consider the social aspect more than ever and that "joined up thinking" between planners and developers is the way forward.

The aim of determining the main social and economic advantages and disadvantages of re-using derelict industrial buildings was achieved. The interviews and the critical analysis of literature enabled the researchers to identify the different views of the social and economic advantages and disadvantages of re-using industrial buildings. Within the primary data, these were identified by a small cross-section of professionals involved in the process and the researchers feel a more representative understanding could be gained if the population was widened. Data analysis revealed that the social advantages greatly outweigh the disadvantages and that economic disadvantages outweigh the advantages. It is concluded the economic disadvantages will tip the balance in the decision to re-use as it is considered financially infeasible and that industrial buildings present a "messier" development opportunity that may deter developers.

Data relating to the economic side of the balance is forthcoming and this is because it is easily quantifiable i.e. profit and loss. It is factored on every development appraisal because it is the principal motivation of adaptively re-using an old industrial building. The
nature of development is to make profit from the building by finding a productive new use for it. The appraisal process involves assessing the building's location and type, ascertaining who the end user will be, and determining how much will have to be spent on the building to provide the desired end product.

Although the social angle was discussed with each interviewee and all agree that each building would be assessed on its merits, the data reveals that in actual fact the social element is not something that is readily considered and it took the researcher's interview technique within the confines of the semi-structured style to probe the subject further to draw out when and why social components are factored in. Developers approach adaptive re-use with the sole intention of profit maximisation and that if in doing this the social factors are covered, that it is an added bonus. As interviewee D stated:

"A successful project is one which makes money; one can also stretch the bounds of that then and say, provides some regeneration for the region and helps the environment and perhaps generate some positive economic feedback. But developers obviously just want to go in, buy an old industrial building, refurbish it, put a tenant in, sell it, make a big turn and move on. But we have consciences as well; we quite often look at how else we can help. Success isn't just about money, it's about adding something positive to the area in which you've done the deal."

This research revealed that the social aspect of the balance is harder to quantify and is shown in the data. There is no section on a residual valuation spreadsheet that asks for a figure to be put next to social costs/benefits; it is a more value judgement. Until developers financially account for the social facets of development it will be a lesser consideration in the decision to re-use/revive an old industrial building. However, there are social-economic studies in place and models being developed that are trying to offer a way of calculating social factors so that they can be quantified and this may even the scales.

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