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Sun, Surf and Sustainable Housing—Cohousing, the Californian Experience

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ABSTRACT *Increasing environmental problems associated with the domestic sector and the decline of local social capital and resident participation in their locality has led the UK government to seek more sustainable housing models. Cohousing could provide one option. However, cohousing has been relatively unsuccessful in the UK so far. The author sets out to prove that cohousing is a more sustainable housing model (using international examples) and that it in fact achieves many of the sustainability objectives of the new urbanist movement. An international comparison of the experience of cohousing in the UK and California and the factors influencing success and failure of cohousing in both locations are then explored. Drawing on the Californian experience the author then tries to provide some indication of how the development of cohousing could be encouraged in the UK in the future.*

Introduction

Environmental problems associated with the domestic sector and the decline of place-based communities has led the UK government to seek more sustainable housing models (Table 1). Housing models are sought that:

- Encourage pro-environmental behaviour;
- Have strong social networks;
- Are socially inclusive;
- Increase residents' well-being;
- Provide affordable accommodation and lifestyle options.

To an extent cohousing appears to fulfil these objectives. The evidence underpinning this suggestion comes from a variety of theories: cohousing, social, community development, social capital, economic, psychological, environmental behaviour and collective action theories (section two). Cohousing also appears to fulfil the objectives and adopt similar design strategies as the new urbanist movement for housing, which again is thought to produce more sustainable housing models.

However, as with many forms of prototype housing models, cohousing has encountered barriers in the UK, partly as a result of the standardization of the house building process

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Table 1. Sustainability objectives for housing

Sustainability objective for housing		Policy, guidance and legislation
Encourage pro-environmental behaviour amongst households	reduce energy consumption by housing	Climate Change Programme (DEFRA, 2000); Energy White Paper (DTI, 2003), Home Energy Conservation Act (Great Britain, 1995), Home Energy Conservation Bill (Great Britain, 2001), Building Regulations (Great Britain, 2002a); PPG3: Housing (DETR, 2000a); Sustainable Communities (ODPM, 2003).
	reduce waste production by housing	Waste Strategy for England and Wales (DETR, 2000b); Waste not Want Not (DEFRA 2002); Landfill Directive (European Union, 1999); Landfill Tax (1996) reviewed 1999/2004. (Great Britain, 1996); Producer Responsibility Obligations (Packaging Waste) Regulations, (Great Britain, 1997); Sustainable Communities (ODPM, 2003).
	reduce land consumption by housing	PPG3: Housing (DETR, 2000a); Urban White Paper (DETR, 2000c); Rural White Paper (DETR, 2000d); Sustainable Communities (ODPM, 2003).
Strong social networks - sense of neighbourhood and community ownership and participation		Sustainable Communities (ODPM, 2003); Better Places to Live by Design (DTLR and CABE (2001); Planning and Compulsory Purchase Bill (GB, 2002b).
Socially inclusive communities		PPG3: Housing (DETR, 2000a); Sustainable Communities (ODPM, 2003); Better Places to Live by Design (DTLR and CABE, 2001); Planning and Compulsory Purchase Bill (GB, 2002b).
Well-being		Sustainable Communities (ODPM, 2003); Well-being of Nations (OECD, 2001).
Affordable accommodation		PPG3: Housing (DETR, 2000a); Sustainable Communities (ODPM, 2003).

and housing designs (Barlow, 1999; Hooper & Nichol 1999a, b) and partly because of the current lack of market. To date there are only a few completed projects in existence in the UK, even though there appears to be some support for cohousing amongst professionals and the government.

Cohousing: Definition

Cohousing combines the autonomy of private dwellings with the advantages of community living. It has private units, semi-private space, indoor and outdoor communal space. It is built at low, medium and high densities and in a variety of layouts and locations, thus communities are very diverse. Communities can be new build or retrofit.

The design and processes operating in cohousing encourage a "collaborative" lifestyle and greater interdependence between residents. Thus, the signature characteristic of Cohousing is its strong and vibrant communities.

Various research studies have found that mutual support networks and social relations are stronger and more developed in cohousing communities than in standard residential areas (Meltzer, 2000; Marcus & Dovey, 1991; Brenton, 1998). The key to success is the social focus of cohousing, cohousers' keenness to build a sense of community and their very positive attitude towards social interaction. Cohousers are diverse in terms of interests, ages, religion and household types. However, in terms of affluence, social class, race, education and attitudes cohousers are a fairly homogenous group. Homogeneity within a community, as explained by Gans (1967), Gehl (1987) and Abu-Gazzeh (1999), reinforces social interaction.

Social contact design (SCD) principles are used to encourage more casual social encounters and increased opportunities for informal socializing. The principles include: provision of indoor and outdoor communal facilities; good visibility into all communal spaces, car parking outside the community or car free communities, gradual transitions between public and private space, provision of semi-private outdoor spaces close to private units for socializing; positioning of key facilities and access points on walkways. Generally the private dwellings tend to be smaller than average unit size (with limited facilities provided). However, the loss of space in the private unit is supported by the provision of communal facilities such as communal kitchen/dining areas, laundry, gym, workshop/hobby room, guest bedrooms, entertainment room, garden, storage space.

Formal social factors in cohousing also help to promote social interaction. Communities all adopt a similar non-hierarchical social structure, which reduces barriers to social interaction. Resident participation in the community is formalized and encourages greater social interaction. Residents are involved in recruiting other residents for the community, development, design, management and maintenance of the community. The extent to which residents are involved depends on the model adopted (Table 2). In the standard model (adopted in the UK) all the activities are resident led. In the streamline and speculative models (adopted in the USA) the development and design processes are developer led.

For all models residents are involved in managing and maintaining the community. Residents are involved in the maintenance and management of indoor and outdoor communal spaces; preparation of communal meals (1–3 times per week); organization of social events within the community and liaising with the wider community. Residents organize regular activities (e.g. social, educational, cultural events and exercise classes) within the communal spaces. Often these activities and spaces are open to the wider community to encourage greater integration and community development across a wider area, unlike gated communities where residents from the wider community are excluded.

Cohousing: The History

The cohousing concept has its roots in utopian, feminist and communitarian movements of the nineteenth and twentieth centuries (Meltzer, 2001). The first wave (Table 3) of cohousing was in Northern Europe (Denmark, Sweden and the Netherlands). These were utopian communities based on communitarian and feminist ideals. Using the

Table 2. The Development Models

Model	Standard co-housing - self development model	Core-group Co-housing	Streamlined Co-housing	Speculative Co-housing
Description of model	Entire resident group involved with the development and design process, as well as community formation.	Two phase model: Phase 1 – core group involved with the development and design process. Phase 2 – recruit rest of group then all involved in community formation.	Group and developer partnership. Developer deals with development process, whilst group deals with recruitment and community formation. Group works in conjunction with experts on design.	Developer led. Developer deals with design, development and community formation.
Community Visioning	All residents involved.	Core group of residents involved.	All residents involved.	Developer.
Recruitment	All residents involved.	Core group of residents involved.	All residents involved with professional help.	Developer.
Legal structures and financing	Resident led with professional help.	Resident led (core group) with professional help.	Developer led.	Developer.
Design Process	Resident led with professional help.	Resident led (design committee) with professional help.	Developer led with resident input.	Developer.
Community development	Resident led with professional help prior to living in community and throughout life of community.	Resident led with professional help prior to living in community and throughout life of community.	Resident led with professional help prior to living in community and throughout life of community.	Resident led once living in community.

Source: Davis, 2001.

Table 3. Comparison of the three waves in the evolution of cohousing

	Wave 1	Wave 2	Wave 3
Time period of development wave	1960s and 1970s	1980s and 1990s	2000+
Location	Northern Europe	USA	Pacific Rim (Australasia and South East Asia)
Phase in evolution of cohousing	Assimilation phase – principles of cohousing have been assimilated into mainstream residential developments, governmental institutions support and fund projects.	Growth phase – rapid market expansion and diversification of the development approach.	Pioneering phase – a few demonstration projects, lack of awareness of cohousing, no diversity in development approach.
Physical characteristics	Holland and Denmark: low-rise, medium density, attached dwellings with separate common house. Sweden: medium or high-rise apartment blocks; communal facilities incorporated into structure.	Low rise, attached dwellings with centralised (but separate) communal facilities and peripheral parking.	All development incorporates eco-design principles.
Development approach	Top down and bottom up approaches (resident led, developer-resident partnerships, speculative). New build and retrofit development.	Partnership and bottom up approaches (resident led, developer-resident partnerships, streamline model). New build and retrofit development.	Mainly bottom-up and new build to date.
Institutional Support	Political support in Sweden, Holland and Denmark. Financial support for the development of cohousing in Denmark.	Limited political support. Greater support from some professionals in US. Also interest from developers/financiers in funding cohousing in the US.	Financial support for the development of cohousing in Australia. Political support in Australia. Information for elsewhere in the Pacific Rim lacking.

(*Table continued*)

Table 3. Continued

	Wave 1	Wave 2	Wave 3
	Provide information to enable the developments to go ahead – Holland and Denmark. Incorporate elements of cohousing into all new residential development in Holland.		
Take-up by population	5% of population in Denmark (1994); 2000 occupied units in Holland (1992).	In US just under 5,000 people lived in cohousing in 2001.	No information given.
Focus	Practical – childcare, support and socialising for families with working parents or single parents – Holland and Sweden. Social – need for community amongst families in Denmark.	Social – need for community.	Environmental, social and economic – environmental design, socially inclusive and affordable accommodation.
Socio-economic characteristics	Holland and Sweden communities more diverse (more singles, elderly). Denmark communities heterogeneous (affluent, well educated families).	Diverse in the USA (many singles).	Trying to encourage mixed communities in terms of affluence, household type and ethnicity.

Source: Based on Meltzer, 2001 and unpublished research by Williams, 2003.

collective housing model (of which there was a rich tradition in Northern Europe for at least 200 years) as a basis for design, the first community was built in Denmark in 1964. In Denmark and the Netherlands cohousing was first developed in order to improve social relationships and increase a sense of community (motivation: communitarism). In Sweden the motivation was to reduce the burden of housework for women and improve the lives of working parents and their children (motivation: feminism).

Horelli and Vespa (1994) highlight cohousing as being a solution to increasing women's empowerment. They see cohousing as an intermediary social structure that allows those services traditionally assigned to individual households to transfer into the neighbourhood. This enables resources and tasks to be shared amongst households thus easing individual burdens, promoting disadvantaged citizens and consolidating society. Cohousing was seen as a solution to overcoming exclusion of women and single parents from the workforce and improving quality of life for children and families. Sharing resources also had positive environmental benefits. Scanzoni (2000) also suggests cohousing as a solution to suburban alienation because it encourages household interdependence that should lead to "greater and widespread equality amongst all members of society". Franck and Ahrentzen (1989), Fromm (1991), and Norwood and Smith (1995) also talk about "supportive" and "nurturing" cohousing communities which again promotes social inclusion and the development of social capital.

In Northern Europe a socially responsive and politically progressive culture (that recognized these benefits) supported the widespread development of cohousing through legislation, financial support and policy, to the extent that many new housing developments in the Netherlands are now built with reference to cohousing principles (Brenton, 1998). Thus cohousing (originally a grass-roots phenomenon) has now been adopted into the mainstream and is delivered through top-down as well as bottom-up processes.

The second wave of cohousing took place in the USA during the 1980s and 1990s motivated by Americans' need for community, social support, interaction and security in their local neighbourhood. The US cohousing model evolved from the Northern European model and adopted a diversity of development approaches (developer led, partnership, resident led, new and retrofit) and procurement processes; a more environmental focus; and led to the emergence of a cohousing movement. The third wave of cohousing began in the 1990s in the Pacific Rim (Australasia and South East Asia) and underwent further metamorphosis. Issues including accessibility and affordability; green architecture and ecological habitation; adaptability and responsiveness to suit regional and cultural differences are being addressed in the third wave of cohousing communities.

Although still very restricted in its coverage, the cohousing model (in all its forms) is becoming more widespread. This has been facilitated by the diversity of the cohousing models developed and the inclusion in some countries of the principles into new housing developments. Cohousing has proved more popular than collective housing or intentional communities largely because cohousing communities reject the idea of having set ideologies; there is an absence of social hierarchy and a lack of shared economic systems. Cohousing has a pragmatic focus that makes it attractive to a wider audience.

In addition cohousing exhibits many of the characteristics of new urbanism both in terms of objectives and design strategies (Torres-Antonini, 2001). The social objectives of new urbanism are to build community; encourage interaction and social connectedness;

create convivial spaces and a diversity of experiences. New urbanism also has environmental objectives to reduce consumption, use of motorized transport and urban sprawl. Cohousing has the same social objectives, which it largely achieves, and although it does not explicitly set environmental objectives, in many communities lower resource consumption, reduction in car use and ownership and more dense and space efficient developments are achieved. Design strategies are also similar. New urbanism and cohousing strategies are based on social contact design principles, i.e. they aim for higher densities, mixed use, the creation of convivial public spaces and pedestrian-friendly environments. According to Torres-Antonini (2001):

> Despite the differences in purpose, scale and scope of their application cohousing communities and neo-traditional developments (created through the application of the principles of new urbanism) are epistemically related in that both social contact design and neo-traditional development guidelines are directed toward improving the quality of life of residents through the physical construction of space. Furthermore, both approaches evidence a marked parallelism in their specific prescriptions for design that enhances community. Of the new urbanism guidelines, those dealing with concentrating buildings, enhancing pedestrian transportation and conceiving streets as "outdoor public rooms" or convivial exterior spaces for social interaction be regarded as expressions of social contact design. (Torres-Antonini, 2001, p. 16)

Cohousing's ability to deliver the objectives of new urbanism and its remarkable similarity to new urbanism in terms of design strategies suggest that although cohousing is currently a restricted housing form that plays a limited role in current housing provision it could well become a more common feature in the future. Finally the social, environmental and economic benefits of cohousing make it a more sustainable housing model and attractive to governments. For these reasons it is important to determine the factors influencing its progress in the UK.

The Research

Research was completed by the author (Williams, 2003) to determine the barriers to cohousing in the UK. Initially a desktop study was completed that identified the potential legal, cultural and economic barriers to cohousing development based on European and US experiences (as there did not appear to be any research which provided a detailed analysis of the UK experience). This provided a framework in which a more detailed investigation of the barriers to cohousing development in the UK could be completed.

Using this framework the second stage studied the experiences of four cohousing groups in the UK to determine the extent to which it could be applied (i.e. which barriers encountered in the UK were consistent with those found in Europe and USA and which were additional). This analysis investigated the economic, institutional and cultural barriers that had impeded the formation and development of the communities.

Subsequently, focus groups with developers (public and private sector), housing and planning professionals, architects, property agents, financiers and cohousers (those currently living in communities and those in forming groups) were conducted to

further substantiate the barriers to the supply and demand for cohousing in the UK that had been identified by the initial two stages of the investigation.

Once the barriers had been identified, solutions for overcoming these barriers to increase both demand and supply were sought. Again the UK focus groups were asked to suggest possible solutions. In order to substantiate the suggestions made and widen the possibilities, the author decided to look to other countries in which cohousing had been more successful (i.e. more communities existed) to determine how the barriers identified had been overcome elsewhere. The case of California was chosen for more detailed study.

Cohousing is better established in California than in the UK. It has moved beyond the *pioneering phase* (the present phase reached in the UK) into the *growth phase* characterized by market expansion and diversification of the model (Table 3). Thus by studying the Californian experience the author felt that a better understanding of the immediate strategies for progressing cohousing from the pioneering phase to the growth phase in the UK could be identified. Focus groups with developers (public and private sector), housing and planning professionals, architects, property agents, financiers and cohousers were completed in California to determine how the barriers identified by the UK focus groups were overcome in California.

This paper presents and discusses the findings of the research. Initially it presents the case for cohousing as a more sustainable accommodation option. Then it outlines the barriers to the supply and demand for cohousing operating in the UK currently. It suggests possible solutions to overcoming these barriers drawing on the Californian experience. It goes on to discuss how market growth and development of cohousing projects can be encouraged in the UK in the future.

Cohousing—The Sustainable Option?

According to Marcus and Dovey (1991, p. 112) "cohousing is a high quality and highly sustainable alternative" to other housing options. Indeed it does appear to fulfil some sustainability objectives:

- Strong social networks and social cohesion
- Social inclusion
- Pro-environmental behaviour
- Reduction in resource consumption
- Well-being
- Affordability.

However, there are also inclusion and affordability issues in cohousing which may undermine its sustainable credentials. In this section the research to support these suggestions is presented. Where there has been empirical research to demonstrate the sustainability of cohousing this is highlighted. A theoretical framework for the empirical research is also given in order to further substantiate the findings.

Networks, Cohesion and Inclusion

Strong social networks and social cohesion are characteristic of cohousing communities. These strong social bonds develop as a result of social contact design (SCD); resident

involvement in the development, design, recruitment and operational processes; social structure (common goals, known, non-hierarchical structure). The notion that design can encourage stronger social networks is reinforced by environment–behaviour theorists. Environment–behaviour theory suggests that the design of housing development can impact on social behaviour of residents (Table 4). Various theorists (Abu-gazzeh, 1999; Altman, 1975; Baum & Valins, 1977; Clitheroe *et al.*, 1998; Coleman, 1990; Fleming *et al.*, 1985; Gehl, 1987; Hillier & Hanson, 1984; Kenen, 1982; Sengul & Enon, 1990) identify design characteristics which will promote social interaction and cohesion within neighbourhoods. Many of these features can be found in cohousing.

Empirical research completed by Torres-Antonini (2001) in a US cohousing community confirms that the design of cohousing helps to increase social behaviours. She studied five behaviours: social interaction, participation, community support, unity and safety in cohousing and found that design features (division of space, densities, circulatory systems and communal facilities) particularly influenced social interaction and safety.

Empirical research by Williams (2005) also suggested that the design of cohousing communities in the US was influential in encouraging greater sociability, stronger social networks and greater cohesion in cohousing especially in combination with social and personal factors. The cohousing literature (Marcus & Dovey, 1991; Fromm, 1991) also suggested that social interaction and cohesion in cohousing communities was particularly high in part due to design.

Community theorists (Forrest & Kearns, 2001; Shaffer & Anundsen, 1993; Beresford & Croft, 1993; Young & Lemos, 1997; Putnam, 2000; Avrahami, 2001) suggest that resident involvement in the development and operation of communities, non-hierarchical social structures, formalized social activities and common goals are instrumental in developing strong social networks and increasing the cohesiveness of communities (Table 4). Thus the formal and informal social structures of cohousing should help to build stronger social networks and cohesion. This suggestion is supported by empirical research conducted in the US, UK and Netherlands by Brenton (1998) and Williams (2005). It is also reinforced by the cohousing theorists Marcus and Dovey (1991) and Meltzer (2000).

The issue of inclusion in cohousing is more difficult to assess (Table 5). Cohousing communities have generally been described as being homogenous and thus are not inclusive. As social theorists (Gans, 1967; Homans, 1968), community theorists (Birchall, 1988; Precker, 1952; Hurwitz *et al.*, 1953; Zaleznik *et al.*, 1958) and environment–behaviour theorists (Gehl, 1987; Abu-Gazzeh, 1999) suggest this helps to develop greater internal social cohesion but generates social exclusion.

According to Williams (2005), cohousing residents (in the US at least) are diverse in terms of interests, ages, religion and household types but not in terms of affluence, social class, race, education and attitudes. Thus residents are more likely to be excluded from communities based on affluence, social class, race, education and attitudes (Williams, 2003). However in the US Williams (2003) found that ethnic and low-income groups generally tended to be excluded from living in cohousing communities because of lack of affordable accommodation or because of personal preference (for more traditional housing forms or to live in a community with others with similar beliefs, differences in culture and personal aspirations). Brenton (1998) found that in the Netherlands communities were forming based on race and religion. This also appeared to result from cultural and religious preferences to live with other like-minded individuals. Such homogenous communities were not inclusive.

Table 4. Theoretical frameworks and empirical proofs for strong social networks

Sustainability objective	Factor influencing social networks/ cohesion	General supporting theory	Theorists	Detailed empirical research – testing the theories	Additional cohousing specific research supporting theory
Strong social networks and cohesion	Social contact design	Environment–behaviour theory	Abu-gazzeh, 1999; Altman, 1975; Baum & Valins, 1977, Clitheroe *et al.*, 1998; Coleman, 1990; Fleming *et al.*, 1985, Gehl, 1987: Hillier & Hanson, 1984; Kenen, 1982; Sengul & Enon, 1990.	Cohousing design (social contact design) positively impacts on social behaviour. – The centrality, size and existence of the common house influenced social interaction, participation, community support, unity and safety. – The division of space and circulatory systems in communities appeared to be the key design factors influencing social interaction. – Circulatory systems and surveillance opportunities created by design were the features most affecting security. – Densities and accessibility were the key design features influencing the strength of support networks in the community. – The common house was identified as being the key design feature encouraging both participation and unity within communities. – Opportunities for social interaction and safety were increased through social contact design whilst participatory, supportive behaviours and unity seemed to be independent of it. Reference – Torres-Antonini (2001) – Density (proximity) and layout; division of public and private space; the quality, type and functionality of communal spaces appear to be the key design factors influencing social interaction in cohousing. – Social (informal and formal) and personal characteristics appear to have a greater impact on social interaction than design. – Social, personal and design factors are inter-dependent. Social and personal factors can significantly enhance the positive impact of social contact design on social interaction.	Marcus & Dovey, 1991; Fromm, 1991

(*Table continued*)

Table 4. Continued

Sustainability objective	Factor influencing social networks/ cohesion	General supporting theory	Theorists	Detailed empirical research – testing the theories	Additional cohousing specific research supporting theory
				Reference – Williams (2003)	
	Resident involvement in decision – making processes and operation	Community Theory	Forrest & Kearns, 2001; Shaffer & Anundesen, 1993; Beresford & Croft, 1993	Informal and formal social factors and personal characteristics influence use of communal facilities and level of social interaction. In cohousing communities these factors operate together increasing social capital. Reference – Williams (2003)	Marcus & Dovey, 1991; Meltzer, 2000; Brenton, 1998.
	Social structure - known; non-hierarchical; formalised activities; common goals	Community Theory	Forrest & Kearns, 2001; Shaffer & Anundesen, 1993; Young & Lemos, 1997; Putnam, 2000; Avrahami, 2001	Informal and formal social factors and personal characteristics influence use of communal facilities and level of social interaction. In cohousing communities these factors operate together increasing social capital. Reference – Williams (2003) Cohousing helps people to organise themselves as a residential group to overcome the alienation of modern neighbourhoods by building mutual support and sociable relations between households. Reference – Brenton (1998)	Meltzer, 2000.

Table 5. Theoretical frameworks and empirical proofs for social inclusion/exclusion

Sustainability objective	Factors influencing social inclusion	General supporting theory	Theorists	Detailed empirical research – testing the theories
Social inclusion	Homogeneity increases internal cohesion but promotes exclusion of certain groups and wider community Strength of social networks within the community may create inward focus Ability to mobilise as a group to tackle local issues alienates cohousers from surrounding community.	Social theory Community theory Environment-behaviour theory Social Capital Theory	Gans, 1967; Homans, 1968; Birchall, 1988; Precker, 1952; Hurwitz *et al.*, 1953; Zaleznik *et al.*, 1958 Gehl, 1987 and Abu-Gazzeh, 1999 Schulman & Anderson, 1999; Putzel,1997; Rydin & Pennington, 2000b	Cohousing communities in the Netherlands tended to be diverse in terms of household size but not in terms of education, income, religion, ethnicity. Communities appeared to form based on religion or ethnicity. Attempts were made to integrate cohousing communities into the surrounding community through design, involvement in local institutions, use of local facilities, etc. Reference: Brenton (1998) – Cohousing communities in the UK tended to be white, middle class, aged 35–55, families with tertiary level education, medium – high income. – Cohousing communities in US more diverse than UK communities in terms of household type, tenure, income, age and religion, but tend to be homogenous in terms of race. – In all communities there is a focus on common social goals but a variety of interests and expertise amongst households – the common goals and the diversity of expertise and interests in communities were sited in the US as factors that helped to bring the communities together. – Communities in the US and UK made efforts to integrate into the wider community. Various approaches were adopted: canvassing local people about the development proposal; recruiting residents form the local community to live in the development; supporting local services/facilities (e.g. shops, schools, etc); opening the community facilities and events to visitors from the locality; becoming involved in local social networks (e.g. local religious groups, parents associations in schools, clubs and societies). – The US communities did recognise their ability to mobilise as a group as being potentially a political strength. One group had used this to lobby for the redevelopment of a local site for local recreational use and for a city car pool. Another group used their political power to lobby for a local youth centre. All were for the benefit of the wider community in these instances. Of course it could also work negatively. Reference: Williams (2003)

It seems that the lack of affordable accommodation in combination with cultural attitudes (people's desire to live in homogenous communities coupled with distrust of new lifestyle and housing forms) are generating homogenous and exclusive cohousing communities. The former can be remedied through diversifying development options and increasing financial subsidies, however the latter cannot be so easily remedied. These issues have been discussed by social capital theorists (Putzel, 1997; Schulman & Anderson, 1999) who highlight the downside of the high levels of social capital often generated in homogenous communities that may result in forms of tribalism and social exclusion.

Williams (2003) found that cohousing communities and professionals in the US were acutely aware of the problem of exclusivity and were looking at ways to diversify through provision of affordable accommodation and targeted recruitment. In addition, cohousing communities in the US, the UK and the Netherlands (Williams, 2003; Brenton, 1998) were attempting to integrate with the wider community. Various approaches were adopted: designing developments so that they integrated into the wider urban fabric, canvassing local people about the development proposal; recruiting residents from the local community to live in the development; supporting local services/facilities (e.g. shops, schools, etc.); opening the community facilities and events to visitors from the locality; becoming involved in local social networks and institutions (e.g. local religious groups, parents' associations in schools, clubs and societies). Again there are accounts of successes and failures on this front depending on:

- The point at which the wider community is involved in the development process (preferably from the start);
- How proactive the cohousers are;
- How well integrated their community is in the urban fabric;
- The length of time the community has been established.

Williams (2003) also found that cohousers' ability to mobilize as a group to lobby for local change alienates them from the wider community. The cohesiveness and internal organization of cohousing communities enables groups to overcome the collective action problem and tackle internal and external issues more effectively (demonstrated by Rydin & Pennington, 2000a, b). In the absence of similar strengths in the wider community, cohousers are seen as a threat.

However, in real terms the nature of the cohousing communities can be beneficial to the wider community. For example, one group in East Bay Area (California) had lobbied for the redevelopment of a local site for local recreational use and for a city car pool and another group in Davies (California) had lobbied for a local youth centre. It seemed in both instances the more the cohousers were seen to be involved in the wider community, the more they reflected views and needs of the wider community, the less the potential for conflict. Overall, social exclusion does appear to be a problem associated with cohousing communities. However, this can be overcome to an extent through the provision of affordable accommodation; targeted recruitment from a variety of groups (particularly in terms of income and ethnicity); physical and social integration with the wider community.

Pro-environmental Behaviour and Resource Consumption

There is evidence of pro-environmental behaviour in cohousing communities. According to the research this results from the high levels of social capital and pooling resources in

cohousing communities. Collective action theorists highlight the importance of strong social relationships within communities to enable wider environmental problems to be overcome (Table 6). Pretty and Ward (2001) highlight the relationship between social capital and natural capital (Figure 1). According to Pretty and Ward (2001), Platteau (1997), Baland and Platteau (1998) strong social networks enable the exchange of resources and pro-environmental ideas within a community. This enables resources to be shared and increases awareness of pro-environmental behaviour. This may be reinforced by the internal culture of the community (through peer pressure, if environmental concerns are prioritized) and the ability of the community to act collectively to tackle environmental problems.

Social psychology theorists also suggest that there is evidence to support that community-based relations in combination with a renewed sense of citizenship could supplant consumerist desires and attachment to material goods (Goldsmith, 1972) thus reducing consumption and encouraging pro-environmental behaviour. Empirical research conducted by Meltzer (2000) in cohousing in the US supported these findings and demonstrated that pro-environmental behaviour (especially re-use, recycling and lower resource consumption) in cohousing communities was indeed enabled by strong social networks. This was further supported by the cohousing theorists Marcus and Dovey (1991) and Fromm (1991).

Residents are also able to share resources in cohousing enabled by strong social networks and the provision of communal facilities/services. Founded on the basic premise of economies of scale, sharing space, goods and services within larger households or between several households will reduce individual resource consumption in a community (Liu *et al.*, 2003; International Consumer Protection and Enforcement Network, 2001; Ironmonger *et al.*, 1995). Both Meltzer (2000) and Williams (2003) calculated the resource savings that could be made by residents in cohousing. Williams found that significant space, energy and goods savings were be made by those living in cohousing in the US. On average 31% space savings; 57% electricity savings and 8% goods savings were achieved.

Meltzer (2000) conducted similar research and found that ownership of cars, washing machines, freezers, DIY and gardening tools was reduced through pooling of resources in cohousing. Residents tend to share second cars and thus ownership of second cars was lower. Resident ownership of washing machines, tumble driers and freezers was reduced by 25% by living in cohousing communities because people tended to use communal laundry and kitchen facilities. Ownership of DIY and gardening tools was also low, again because the tools were shared communally. Ownership of lawnmowers reduced by 75% when residents moved into cohousing. Again these findings were supported by the cohousing theorists Marcus and Dovey (1991) and Fromm (1991). Marcus and Dovey (1991) found that cohousing encourages low-impact lifestyles; increases resource conservation through high densities, encouraging sharing of appliances, cars, facilities and household activities. Fromm (1991) also noted that cohousing was less wasteful of land.

Well-being and Affordability

The cohousing literature suggests that European and US cohousing communities have a better quality of life due to a heightened sense of well-being and a more affordable lifestyle (Marcus & Dovey, 1991; Meltzer, 2000; Brenton, 1998; Fromm, 1991).

Table 6. Theoretical frameworks and empirical proofs for pro-environmental behaviour and reduction in resource consumption

Sustainability objectives	Factors influencing environmental outcomes	General supporting theory	Theorists	Detailed empirical research – testing the theories	Additional cohousing specific research supporting theory
Pro-environmental behaviour	High levels of social capital encourage pro-environmental behaviour	Collective action theory Social psychology theory	Pretty & Ward, 2001; Platteau, 1997; Etzioni, 1995; Rydin & Pennington, 2000; Goldsmith, 1972	High levels of social capital in cohousing encourage pro-environmental behaviours: – Increases environmental awareness. – Creates a protective society in which can operate environmental practices based on common rules and norms. – Increases peer pressure to adopt pro-environmental behaviours – Switch of focus for individual to collective responsibility that encourages pro-environmental behaviour. – Ease of implementing environmental schemes collectively rather than individually. – Recycling and re-use capabilities were greater amongst residents living in cohousing and greater capacity to share goods and space. Reference: Meltzer (2000)	Marcus & Dovey, 1991; Fromm, 1991
Reduce resource consumption	Resource savings made in cohousing through pooling of resources.	Ecomomic Theory - Economies of scale	Lui *et a*l., 2003; International Consumer Protection and Enforcement Network, 2001; Ironmonger *et al.*, 1995	Significant space, energy and good savings can be made by those living in cohousing. On average 31% space savings; 57% electricity savings and 8% good savings. Reference: Williams (2003) Residents tend to share second cars and thus ownership of second cars is lower. Resident ownership of washing machines, tumble driers and freezers was reduced by 25% by living in cohousing communities because people tended to use communal laundry facilities. Ownership of DIY and gardening tools was also low, again because the tools were shared communally. Ownership of privately owned lawn mowers reduced by 75% when residents moved into cohousing. Reference: Meltzer (2000)	Marcus & Dovey, 1991; Fromm, 1991

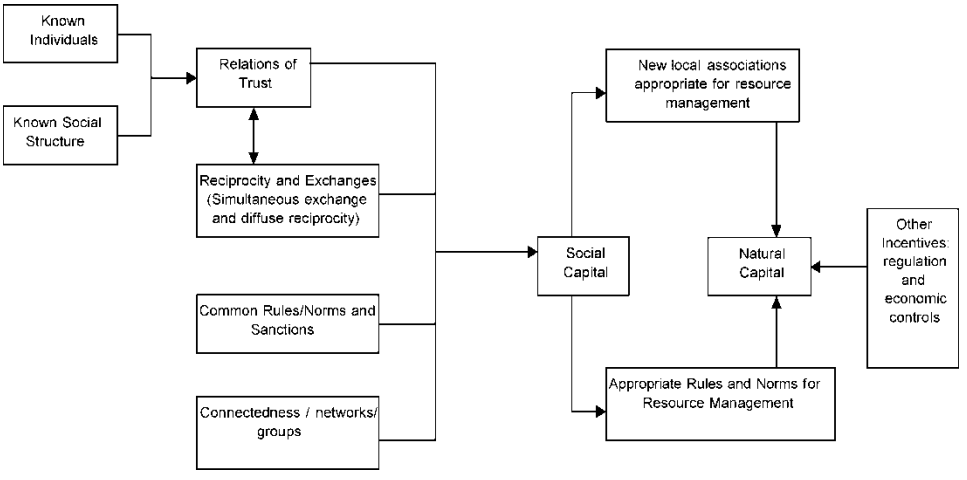

Figure 1. The relationship between social and natural capital.
Source: Based on Pretty and Ward (2001)

Economic and psychological theory would support these assertions (Table 7). In terms of well-being the psychological theory of "*hierarchical needs*" developed by Maslow (1954) in which needs were divided into five hierarchical levels (physiological, safety, a feeling of belonging, self-esteem and self-actualization) provides a good starting point. The theory suggests that levels of well-being increases as each of the five levels are progressively attained—physiological being the base level to be achieved and self-actualization the end point. Cohousing appears to deliver all five levels. This is demonstrated by Metzler's Empowerment Model (Figure 2).

In practice much of the cohousing literature discusses the issue (Marcus & Dovey, 1991; Meltzer, 2000; Brenton, 1998; Fromm, 1991). A more detailed study of cohousing communities in the US (Williams, 2003) revealed that according to cohousers their greater sense of well-being resulted from increased opportunities for socializing, better developed support networks, greater security and safety within communities, opportunities to share chores (thus reduce time spent on chores and increase leisure time) and expertise and more generally interdependent living. This largely reflects Maslow's hierarchical needs theory.

The financial savings (in terms of daily expenditure) that residents could make through economies of scale (sharing resources) was also highlighted as a factor that increased well-being. In addition, the same economies allowed some households access to service, facilities and goods that they would not otherwise have had (e.g. gym and office equipment) that also increased well-being.

However, although daily expenditure in cohousing is lower, the cost of buying a property in cohousing communities and the financial risk to the resident is significantly greater than in standard housing. In economic terms, new build cohousing generally tends to be more expensive than standard housing because it incorporates additional communal facilities and the development process is longer. Also units are often customized and developments tend to be one-off which again reduces economies of scale and increases costs. This is counteracted partly by higher resale values (Williams,

Table 7. Theoretical frameworks and empirical proofs for testing the well-being of residents and affordability of accommodation and lifestyle

Sustainability objectives	Outcomes	General supporting theory	Theorists	Detailed empirical research – testing the theories	Additional cohousing specific research supporting theory
Well-being	Residents levels of well-being high in cohousing because of the strength of the social and support networks (developed through design and process)	Psychology theory – hierarchical needs	Maslow, 1954	The benefits of living in cohousing include an increase in well-being resulting from increased opportunities for socializing, support, security, sharing chores, sharing expertise, living with people with similar interests, inter-dependent living. These benefits are built through a combination of social contact design and process (resident involvement in decision-making and community formation Reference: Williams (2003) Well-being generated through empowerment – empowerment model. Reference: Meltzer (2000)	Marcus & Dovey, 1991; Brenton, 1998; Fromm, 1991
Affordable lifestyle	Financial savings made in cohousing through pooling of resources.	Economies of scale	–	Cohousers highlighted significant savings in daily expenditure as a result of sharing facilities, vehicles and goods. Reference: Williams (2003)	No comprehensive studies
Affordable accommodation		Economies of scale	–	Higher capital costs borne by resident or developer. However, there are opportunities to reduce costs through restricting customisation and altering the development model. Also higher resale values. Reference: Williams (2003)	No comprehensive studies

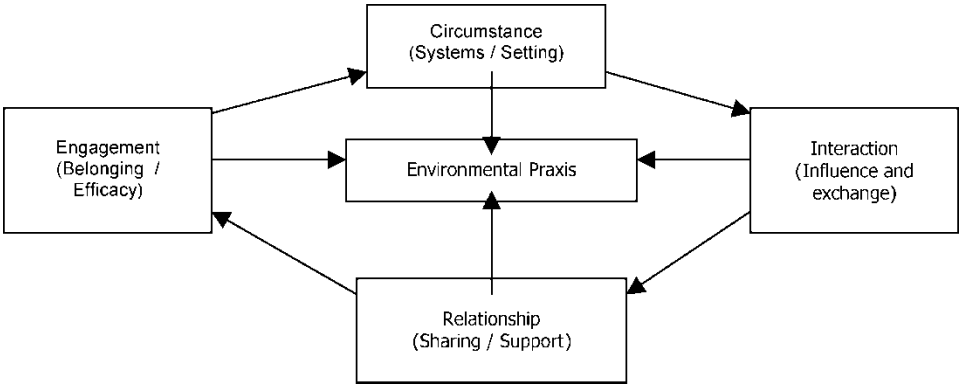

Figure 2. Empowerment model of influences upon environmental praxis within the context of community. *Source:* Meltzer (2000)

2003). Cohousing communities offer few tenure alternatives and as a result cohousing in its current form is not an affordable housing option for lower income groups.

This review of theory, cohousing literature and empirical research suggests that cohousing is potentially a more sustainable form of housing. With stronger more cohesive communities, more affordable lifestyles, higher levels of resident well-being and pro-environmental behaviour cohousing has a lot to offer in terms of fulfilling the sustainability objectives. However, in terms of social inclusion and providing affordable accommodation cohousing needs to evolve in order to achieve sustainability objectives.

From San Fran' to the South Downs

The architects McCamant and Durrett first introduced cohousing into the USA in 1986. By 2001, 56 communities were completed in US and Canada, with 23 more communities in the construction pipeline (to open by 2003; TCN, 2002). The majority of completed communities are in suburban and urban areas. In geographical terms, the majority of the communities are on the West Coast (15% in California) and in the North East of the USA (Figure 3). Currently 13 cohousing communities have been completed in California. A further 15 are in the development pipeline.

The number of communities in Californian is continuing to grow. Statistics from the cohousing network (TCN, 2001) suggest that cohousing communities in California are also becoming increasingly diverse in terms of location (urban, suburban, rural) and household type (rapid increase in couples and one-person households) but not in terms of ethnicity or income (although a small increase in low income households living in cohousing). New development models have also evolved (see section four).

In contrast, few cohousing communities currently exist in the UK. In fact, only two cohousing communities (as defined in section one) have been completed. These are the Community Project (East Sussex) and Thundercliffe Grange (Sheffield). Both of the projects are examples of retrofit, brownfield development. A further development, the Stroud Cohousing Project, is currently entering into the construction phase of the development process and is the first example of a new build, brownfield cohousing development in

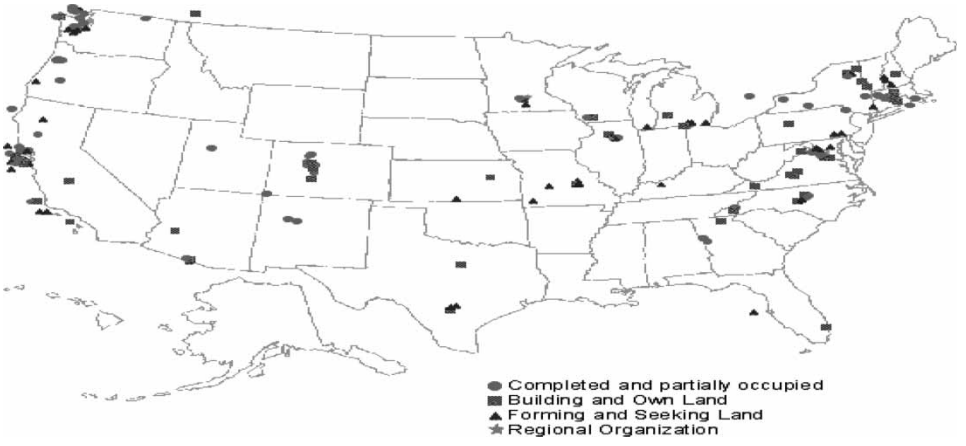

Figure 3. Geographic location of current and planned cohousing communities in North America. *Source*: TCN Website (2002)

the UK. It will also be the largest project in existence, providing accommodation for 34 households when it is completed.

According to the official UK Cohousing Web Site (2004) there are eight additional cohousing projects currently in the development pipeline in the UK, whilst seven projects have closed down. The developments are dispersed across the UK, although there does appear to be a higher concentration in Southern England. Thus cohousing is still in its *pioneering phase* in the UK (Table 3).

The creation of the Cohousing Network and the Cohousing Foundation (made up of interested prospective residents and professionals) suggests an increase in interest in cohousing in the UK. Newspaper articles published in the national press (Gray, 2001; Cunningham, 2001) suggest there is also growing public interest in this new form of development. Coleman (2002) in a recent press article looks at the housing shortage problems in London and describes cohousing and its potential to provide a sustainable solution.

There is also some interest from central government. The Housing Corporation is currently sponsoring research into the development of a cohousing community in London for older women and finding suitable legal and financial models for the future development of mixed tenure cohousing schemes in Britain (thus overcoming some of the inclusion issues mentioned earlier). At a local level, the London Mayor's Housing Commission showed support for cohousing in the *Spatial Development Strategy for London* (Greater London Authority, 2001, p. 12 (para. 9.4)):

> We welcome support for innovative solutions to housing problems, for example the current research project into the feasibility of establishing a cohousing project for older women in London funded by the housing corporation. The Spatial Development Strategy should encourage such schemes.

However, despite growing professional and public interest in cohousing, the market in the UK appears to be very marginal. The failure of seven cohousing groups also highlights

the significant barriers to development in the UK. Three key barriers were flagged up by the research: lack of expertise and awareness; the standard model and resale values (Williams, 2003).

Lack of Awareness and Expertise

Both supply and demand for cohousing was restricted by lack of awareness of cohousing amongst the public, professionals, developers and financiers in the UK. Developers did not feel that they had adequate in-house expertise to design and construct cohousing. The issue of lack of expertise amongst professionals was also highlighted by the planners and property agents as being a barrier to the development and resale of cohousing. Planners felt they needed more information about cohousing in order to proactively support its development. Property and land agents felt that information about the benefits of living in cohousing and resale values would help them to sell properties. They also suggested that with greater understanding of what was needed for a new build development they would be able to identify and secure suitable sites for cohousing communities.

The Standard Model

It was suggested by the developers that whilst the standard model is used in the UK, competition for sites was a major problem for new build projects. Cohousers also highlighted that competition with developers for sites had restricted the construction of cohousing in the UK because resident groups could not compete financially with developers. Developers had the resources to purchase sites as they became available, whilst cohousing groups would have to be satisfied with marginal sites that developers were not interested in. The involvement of developers in projects would ensure suitable sites were secured. Developers, financiers and cohousers identified the standard development model as being a major barrier to demand for cohousing because of the financial cost, time cost and emotional cost to the residents.

Resale Values

Developers and financiers were also concerned that without evidence of resale values, investment in cohousing projects was too risky. They currently see cohousing at best as a niche market option, reinforced by the costs associated with the standard development approach. Developers and property/land agents also felt that the public would be suspicious of the term "cohousing" and housing with communal facilities which would create a barrier to demand and affect resale values. The lack of diversity of residents (in terms of their income or ethnicity) living in cohousing communities or in forming cohousing groups in the UK was also highlighted as being a barrier to demand which might limit prospects for resale.

Is Planning a Barrier?

The research showed that the planning system does not prevent cohousing communities from being built, but nor does it positively promote them through policy, local spatial strategies or design guidance. The planning system often slows the development

process (which is already very long) rendering some projects economically unviable. Also the use class designation of communal facilities has proved a problem, although not insurmountable. In some instances planning authorities have separately classified communal facilities in cohousing (especially office space and leisure facilities) from the residential element. This has had implications for obtaining sites, parking and infrastructural requirements, which in some cases has actually prevented development.

The Californian Experience

The research (Williams, 2003) showed that four key factors in California had led to the progression of cohousing from the *pioneering* to the *growth phase*: new development approaches, culture, institutional structures and publicity.

New Development Approaches

In California new approaches to development have evolved. Several models have been developed including standard, core group, streamlined and speculative models (Table 2). The diversity of development models has increased professional and public interest in cohousing in California. In the standard model residents are heavily involved in all aspects of the development process. Residents find their own financial resources, recruit other residents and are involved in the design and development of the community. This requires major financial and time input from the residents. It also means that residents need to have adequate expertise to deal with professionals. The standard model also places all the financial risks associated with the development on the resident. Thus, it can prove a time consuming, costly and risky business. This limits professional interest and market for cohousing. This is currently the only model that has been used in the UK and explains in part cohousing's limited success to date.

The core group model is similar but involves a developer in the process. A core group of residents is involved in visioning, recruitment, design and interacting with the developer and other professionals. The professionals deal with all aspects of the development process, with guidance from the core group. The developer also provides greater financial support, which reduces the risk to the resident. However, the process is still largely resident led and is thus still time consuming. This is a more popular approach amongst professionals and potential residents than the standard model because it reduces development time lines, thereby reducing costs and financial risks for the resident, but it is still a lengthy and costly process when compared to more traditional housing forms.

The streamlined model (a developer–resident partnership) is different from the core group model in that it reduces resident input into the development process, allowing residents to concentrate on the issues of visioning, recruitment and capacity building, whilst the developer deals with financing, finding a suitable location and suitable professionals to complete the work, obtaining planning permission and designing the development (with some input from residents in the design phase). Like the core model, this reduces the financial and time input from residents and places all the financial risk on the developer. It also shortens the development time line (thus reducing costs and risks), which makes it a more attractive option to residents and developers.

The speculative model reduces resident participation still further. Projects are built in areas where there is a potential market for cohousing. Developers identify sites, finance

and professionals to carry out the work. The projects are generally part built or completed when the recruitment process begins. Residents are not involved in the development process. They can be partially involved in the design process (a matter left to the developer's discretion) certainly in terms of choosing the communal facilities. The private units can also be left as shells or only partially completed to enable design decisions within the private units to be made by residents (during their own time and at their expense). Residents may also be involved in the latter stages of the recruitment process. This developer-led approach removes the time and financial pressures from residents. It also significantly shortens move-in times, but the social linkages created by resident-led and partnership approaches appear to be weakened as a result of lack of social interaction between residents prior to moving in.

The Californian experience has shown that partnership and developer-led approaches have increased the marketability of cohousing in California, which in turn has captured the interest of developers and professionals. The creation of a market resulting from these models, supported by suitable expertise and funding (from professionals and developers) appears to be the key to the progression of cohousing in California. This suggests that the progression of cohousing in the UK could be encouraged through the development of less costly, risky and time consuming approaches to development (i.e. partnership and developer-led approaches).

Culture

Culture impacts on the success of cohousing in several ways. It affects:

- Residents' need for community, security and support networks
- Residents' acceptance of the design
- Residents' willingness to participate in the community.

California has a history of radical social innovation (Schwartz, 1998) and of communal living projects. The UK too has a well-defined history of creating new communities and innovative neighbourhood environments over the past 150 years (for example: house building cooperatives, socialist and utopian communities, philanthropic town planning of visionary Victorian industrialists, garden cities, new towns, communes and squatter groups). However, the perceived need for community, security and support networks in California appears to be greater than in the UK.

Throughout the US there is renewed interest in community. Americans are looking for ways to rebuild local communities. The key motivating factor in the US is residents' need for safety and security in the home environment (McCamant & Durrett, 1994; Blakely & Snyder, 1997). Other factors include residents' need to maximize opportunities for socializing and the financial benefits accrued from an increase in property values. In addition, community offers informal support networks at a time when formal support networks (social and health services) are inadequate in California. This has resulted in greater levels of public interest in cohousing. Whilst in the UK formal support networks are comparatively good (especially in terms of social and health services) and although security is a growing problem, it has not yet reached the scale of problem encountered in the USA. Thus the motivation for living in cohousing is somewhat less in the UK.

The mobility of the population in California has meant that residents seek ready-made communities in the areas they move to. California is seen as having a particularly mobile population, as it attracts many residents from out of state as well as international visitors. These people have travelled long distances and by moving to California have severed ties to where they used to live. Therefore they are looking to move into areas with greater local social capital, where they can feel more secure and have informal support networks, and cohousing provides this. Conversely, the UK population is less mobile and residents tend to retain their social ties after relocating. Therefore there is a less urgent need for ready-made communities in the UK than in California.

The perception of housing with communal facilities in California is more favourable than in the UK. In Californian as in the rest of the USA there has been an increase in interest in multi-unit developments with communal facilities, driven by two factors. Firstly the leisure and social opportunities this type of development provides residents. Secondly the social cache of living in a development with additional communal facilities (e.g. gym, pool, etc.) and higher property values.

Traditionally housing with communal facilities (i.e. bed-sits, house/flat shares) in the UK have tended to be unpopular and of low social status (usually only offering rental units), although currently there appears to be renewed interest in house and flat shares in areas where rental and property prices are high (especially in the South East and London). There has also been an expansion in the market for luxury, gated communities with communal facilities in urban areas. However the demand for this type of accommodation still remains very limited in the UK.

Cohousing also requires greater resident participation than standard residential developments. In California, citizens appear to be more used to being involved in decisions made about their local environment and are keen to participate. Residents' interest in involving themselves in local matters in the US has been demonstrated by the significant growth in community associations in recent years (CAI, 2002).

Thus residents have the confidence and expertise required to get involved in the development process or organizing activities in their neighbourhood (Cullingworth, 1997). This creates a culture of participation at a local level that makes cohousing more attractive in California because it allows residents some autonomy in making decisions about their local areas.

Resident participation tends to be more restricted in the UK. Organization of activities and decision making at the neighbourhood level tend to be by external parties and not the residents. Thus residents do not tend to have the confidence or expertise they perceive necessary to make autonomous decisions in their locality. Significant cultural change combined with educational support would be needed to encourage UK residents to be more involved in the process. This certainly creates a major barrier to the progression of cohousing in the UK.

Institutional Structures

In California there appears to be greater support from developers and financial institutions for a more bottom-up approach to the provision of housing, e.g. self-build, custom built housing and cohousing, as there appears to be a lucrative niche market for all three (evidenced by the feedback from the Californian focus groups). As the market for cohousing has grown in California, more developers and financiers have become interested in

investing. This is partly because financial returns are guaranteed for cohousing developments as formed and committed resident groups approach developers. In fact most cohousing developments are 75–100% pre-sold in California (Californian focus groups). This reduces the risk of investment to both financiers and developers. Resale values above current market rates have also reinforced this and reduced the risk of investment to residents (Californian focus groups).

There also appears to be a great deal of interest in cohousing amongst more affluent groups in California (evidenced by Californian focus groups), which means it is potentially a lucrative niche market for developers. Thus the market potential for cohousing is increasing in both new and second-hand markets in California. In contrast, cohousing's limited track record in the UK means that developers and financiers are wary of investing in projects. Likewise there is some anxiety amongst UK cohousers in terms of resale values.

As the market has grown in California for cohousing, the range of related services offered by professionals has increased (and covers development, project management, design, capacity building, marketing, recruitment and publicity) which helps to facilitate a more bottom-up approach to housing provision. Again in the UK until a market for cohousing is proven this expertise will be lacking. Even realtors in California are beginning to actively facilitate this niche market by finding units in existing communities for those wishing to live in cohousing; identifying potential residents for cohousing groups looking to recruit new residents and in some cases by actively taking a role in the formation of cohousing groups and identification of suitable sites/properties for development, especially in San Francisco and the East Bay Area (Californian focus groups).

Thus, realtors are also proactively facilitating a more bottom-up approach to housing. Initially this encourages realtors to exploit the market and eventually it encourages more investment for cohousing from financial institutions. This improves funding opportunities and opens up the market to a greater diversity of people. Also advertising through realtors gives access to a wider group of people in society and helps to move cohousing into the mainstream. In the UK lack of awareness of cohousing amongst property and land agents has meant that so far they have not been involved in the process, which has restricted demand.

The Californian planning system itself has been used to positively promote cohousing. For example, zoning ordinances have been used to enable cohousing development. The Californian experience certainly suggests that ordinances are helpful for speeding up permit decisions and for positively discriminating in favour of cohousing. Most Californian planners recognize the environmental and social benefits of cohousing. They also recognize its potential to deliver local services/facilities, which is especially important since the reduction in local funds has meant that there is less money available for public facilities and services in California. Thus the combined benefits of cohousing make it an attractive option for government in California.

Publicity

The UK focus groups highlighted that the level of awareness of cohousing amongst the public and professionals limited its progress. Professional and public awareness of cohousing in California resulting from significant publicity campaigns and public access to a larger number of exemplary projects has ensured the successful development

of many new build projects. This has been reinforced through educational and training programmes organized by the US Cohousing Network. Involvement of realtors in forming retrofit cohousing communities has also meant that the concept is marketed more widely.

Lessons Learnt

Various key lessons can be learnt for the UK from studying the Californian experience. Firstly, attitudes in the UK towards accommodation with communal facilities and resident involvement in the local community will need to be altered in order that there is a market for cohousing. Secondly, the awareness of cohousing amongst the public, developers, financiers and professionals will need to be raised in order for market expansion to take place. Thirdly, new approaches to development (similar to those in California) will be needed in order to increase demand for cohousing in the UK. Finally, a more proactive planning approach is needed to support the development of cohousing or the incorporation of cohousing principles into residential areas in the UK.

Change in Attitudes and Behaviour

In California cohousing has proved popular because of the benefits it provides, including opportunities to socialize, provision of informal support networks, safe and secure living environments. In the UK the motivation for living in cohousing is less because the population is less mobile and formal support for health and social needs is greater. However, the public does seek safe and secure living environments, mutual support networks (for child care and care of the elderly or less able) and to an extent opportunities to socialize locally. These are the benefits that need to be highlighted to the public if cohousing is to become more popular in the UK.

The social cache of cohousing will also need to be made apparent through marketing and publicity campaigns if it is to be popular in the UK. Cohousing can provide a more luxurious and permanent lifestyle option than more traditional forms of accommodation with communal facilities because it offers greater design flexibility and more private space. The communal facilities (especially office, leisure and entertainment facilities) themselves and social benefits could also provide a selling point, as could the opportunity for residents to be involved in the design process. The security and safety of cohousing communities also raises the values of properties. More generally the resale values of cohousing suggest a more affluent niche market.

Living in cohousing requires high levels of participation from residents in activities including the development of the community and its operation. Currently in the UK public participation in local communities is low. Also professionals that interface with communities have only limited experience in engaging communities and encouraging greater participation. In the UK there are examples of isolated informal innovative local authority practices to increase public participation in neighbourhoods and the planning process. In addition, local authorities have more recently had to formally change their attitudes towards participation and community involvement to be more inclusive as a result of the Local Government Acts (GB, 1999; 2000) and the Planning and Compulsory Purchase Bill (GB, 2000b). However, the culture of resident participation is not currently well developed and will need to evolve and be encouraged through education (for example

using citizenship education programmes in schools as a vehicle), training programmes and innovative funding mechanisms.

Professionals will also need to be encouraged and trained to take on a more facilitative role. This process would need to be sustained through outcomes. Resources for training and capacity building (perhaps through expansion of the current empowerment fund) and resident-led schemes should be made available. Residents' associations could be used as vehicles for managing local communities (Rydin & Pennington, 2000a). Residents could also be involved in recruiting other residents to live in their communities. This should be supported financially by the developer (for new build projects) or local authority (for retrofit projects).

Raising Awareness

Publicity campaigns and demonstration projects (similar to those found in California) could be used to further increase the profile of cohousing and expand existing markets in the UK. Financial assistance from the government may be required initially for new build and retrofit demonstration projects. Raising the profile of the UK cohousing network and encouraging developers and professionals to become involved in the network, as they have in the USA, could also help to facilitate development.

In addition, providing financiers and developers with figures for potential profits to be made from cohousing using data from the USA may increase their interest. Providing UK professionals and developers with the opportunity to discuss the technical and financial issues associated with cohousing with their American counterparts through the US Professional Cohousing Network (or perhaps through a mentoring programme) would help to increase awareness and expertise amongst professionals and developers, which would facilitate the development of more communities in the UK.

Involving land/property agents could increase the public's awareness of cohousing and open it up to a wider market. This may help to diversify communities. It will also help residents (in resident-led or partnership schemes) to find suitable sites or perhaps even identify other interested parties for their communities. Thus property and land agents could help to form resident groups and find suitable sites for communities.

New Approaches to Development

Introducing a variety of new approaches to development into the UK would increase market appeal and help to generate increased interest amongst developers. Models similar to those in California (core-group, streamline and speculative) will overcome the key barriers to market expansion created by the standard model (i.e. long development time lines, financial risk to residents, lack of adequate expertise amongst residents for involvement in the development and design process, problems raising finances, etc.). Market expansion will generate greater interest from professionals and encourage financiers and developers to support projects. This will mean an increase in expertise amongst professionals that will be essential for delivery of cohousing to a wider market.

Proactive Planning

The planning system could be used to facilitate the development of cohousing or the inclusion of cohousing principles (SCD and resident participation) into residential areas.

Material Considerations

Policy, design guidance, development plans (local spatial strategies), building regulations and land use classifications could be used to support cohousing, SCD principles or encouragement of greater resident participation in the planning and management of their local areas by making them a material consideration when a planning application is made. As a material consideration planning authorities can require the development of cohousing or application of its principles through section 106 agreements in new developments.

Design guidance could be used to specify the use of SCD (closely allied to new urbanist design strategies already supported to an extent by the planning system) in mainstream housing developments. Already residential design guidance specifies higher densities, reduced parking spaces, parking on the periphery of housing projects (all elements of SCD and new urbanist design strategies) but it does not cover other elements (e.g. provision of communal facilities, division of public and private space). These additional features could be specified.

Preference for residential development based on cohousing (and or new urbanist) principles could also be expressed in the local spatial strategy (site specific or general statement) making it a material consideration. Sites particularly for cohousing could be identified through the local spatial strategy. This could be reinforced through the sequential test for housing. In addition, the community strategy could be used to promote greater resident involvement in their local area.

The provision of communal facilities in residential developments could be specifically addressed by setting minimum unit sizes in building regulations and significantly lowering those limits (to increase densities) if communal facilities are provided in a development (as the major barrier to the provision of communal facilities in new build development is the profit loss to the developer resulting from building at lower densities). The classification of communal facilities in cohousing as a separate use class from the residential development has proved a problem for some developments. This can easily be overcome (and already has been in some instances) by classifying communal facilities as being an ancillary use.

The Planning Process

Fast-tracking applications that adopt cohousing (or new urbanist) principles through the planning process would also help to promote development. This would reduce development time lines and thus risk and costs to the investors (developers, financiers or residents). Greater resident involvement in the design and management of their locality could be encouraged through a more inclusive and facilitative planning system. Residents could be encouraged to take a greater responsibility for their local environment, whilst planners adopt a more facilitative role. Educational programmes and capacity building exercises for residents and professionals will be needed to provide them with the skills for their new roles. Resident groups will also need to be given greater autonomy in decision making and encouraged to be more proactive (as suggested by Rydin & Pennington, 2000a).

Allocating Sites

In addition to sites for cohousing development being identified in local spatial strategies, planners could allocate sites (owned by the local authority) through the Best Value

Programme. This would reduce the land costs to a developer and release funds for SCD features and resident capacity building exercises

Identifying Funding Streams

Planners could usefully identify suitable funding streams for demonstration projects (e.g. Sustainable Communities Programme and Millennium Communities Programme), retrofitting SCD features in existing residential developments (e.g. New Opportunities Fund for Transforming Communities Programme) and resident capacity building (e.g. Empowerment Fund). However, these funds will need to be made more widely available and not just targeted at deprived areas as they are currently. Tax breaks could also be given to developers for adopting SCD features or including resident involvement in the development process in new build projects. Thus planners could be instrumental in encouraging the development of this more sustainable form of housing or more generally promoting new urbanism.

Conclusions

Cohousing appears to be a more socially and environmentally sustainable form of housing. This paper demonstrates the theory and evidence that substantiates this claim. It shows that cohousing communities are socially cohesive; residents have a good quality of life (demonstrated by higher levels of well-being) and affordable lifestyles. There is also evidence to suggest that residents in cohousing adopt pro-environmental behaviour at least in part due to the social structure and design of developments (rather than the pro-environmental views of residents).

In addition the paper demonstrates that exclusivity and lack of affordable accommodation in cohousing communities make it a less sustainable option. The problem of exclusivity to an extent can be overcome through targeted recruitment of underrepresented groups, the physical and social integration of cohousing into the wider community and the provision of a variety of affordable accommodation options.

More affordable accommodation could be provided if development costs can be reduced. The cost of developing cohousing could be reduced through greater standardization of the process and use of developer-led models. This, however, should not be at the expense of social contact design features, resident involvement in the design process or operation of the community (all of which are important in achieving sustainability objectives). Provision of a variety of tenure options is also important to enable a greater diversity of people to access cohousing. Thus, current work on mixed tenure cohousing schemes led by the Housing Corporation will prove to be key to bringing the concept to a wider audience.

Retrofit schemes that use existing stock could also provide a more affordable and environmentally sustainable option. Social contact design features would need to be retrofitted into the community and a strong emphasis placed on capacity building (perhaps by encouraging local residents to be more involved in managing their local environment and providing them with the skills to do so successfully). The issues of both exclusivity and affordability need to be more thoroughly researched.

The wider relevance of the research is more difficult to determine. Torres-Antonini (2001) argues that cohousing is a subset of new urbanism and that incorporating the

lessons learned from the cohousing experience to planning the development of towns and suburbs may be the way to deliver sustainable communities. Certainly in terms of the common aim to achieve sustainability new urbanism and cohousing have a lot in common. Thus a proactive planning system (as described above) may encourage the development of individual cohousing communities. It may also provide some useful pointers for how new urbanist principles can be incorporated into new housing developments.

However, the scale of cohousing communities and the level of resident involvement in decision-making processes will need to be addressed if cohousing principles are to be applied more widely. In addition, the selectivity of many cohousing communities and residents' predisposition towards higher levels of social interaction must be considered. Thus it would be dangerous to infer generalizations or applicability of the study findings to residents of other housing types.

Lack of awareness and development approaches have severely limited both supply and demand for cohousing in the UK to date. These problems have been tackled in California through marketing and the development of demonstration projects, involvement of realtors in the process and new development approaches. However, the Californian experience also suggests that fundamental institutional and cultural changes may be needed in the UK if cohousing is to have greater appeal in the future.

In its standard form cohousing:

> requires the erosion of capitalism as a prerequisite. While the exact forms of a necessary socio-political order are not clear it would seem to be at once socialist, egalitarian, non-hierarchical, non-bureaucratic, small scale, communal, and somewhat anarchic. (Dovey, 1990, p. 79)

New forms will need to be introduced in the UK that are institutionally compatible and culturally acceptable. Thus, current models will need to evolve but in a manner that does not diminish the ability of cohousing to achieve sustainable objectives. Regardless of its acceptance in the UK, cohousing has already proven its success in Europe and is gaining popularity globally. Because it delivers many of the sustainability objectives outlined by governments it may well become a more mainstream housing form in the future.

This paper adds to current cohousing theory by providing more comprehensive proof of its ability to achieve sustainability objectives. In doing so it also identifies the gaps that need to be researched more thoroughly especially:

- The economic costs and benefits of living in a variety of cohousing forms;
- Providing affordable options;
- Solutions for overcoming the conflict between social cohesion and inclusion in cohousing communities.

The paper also highlights the roles that institutional structures and culture play in influencing the adoption of cohousing models and how this varies internationally. This builds on current understanding that focused on Dutch and US case studies by studying the UK situation in detail. More research is needed to determine how international cultural and institutional characteristics will influence the adoption of cohousing, but more importantly how it will generally influence the acceptance of more sustainable forms of housing in the future.

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