

## CHAPTER 5: PHYSICAL ENVIRONMENT

### Introduction

The physical environment includes housing and public spaces of varying quality and accessibility. Accessibility is affected by spatial patterns (for example, suburban sprawl and geographic isolation) as well as transport. Aspects of the physical environment have been associated with physical and mental health<sup>1</sup> and crime.<sup>2</sup> Consequently, the physical environment and more specifically urban planning have been of increasing interest in public health<sup>3,4</sup> and crime prevention.<sup>5</sup> This interest is reflected in projects such as the United Nations Children's Fund (UNICEF) Child Friendly Cities program,<sup>a</sup> the United Nations Educational, Scientific and Cultural Organization (UNESCO) Growing Up In Cities project,<sup>b</sup> the World Health Organization (WHO) Healthy Cities Project,<sup>c</sup> and the United Kingdom's Urban Policy and Neighbourhood Renewal Program.<sup>d</sup> This chapter presents research relating to the impacts of various dimensions of the physical environment on health and crime outcomes (and drug-use outcomes where available) and concludes with a consideration of the importance of the physical environment for drug outcomes.

### Housing

A number of reviews have studied the impacts of housing on health, crime and the socio-cultural environment. Relevant points from reviews conducted in Canada<sup>6</sup> and at the Australian Housing and Urban Research Institute<sup>7,8</sup> are summarised below.

In his review on the impacts of housing and health, Dunn reported on research on the impacts of housing on mental health and social relations.<sup>6</sup> In relation to mental health, research has indicated that living in substandard dwellings can contribute an additional source of stress to people with lower incomes and result in psychological distress. Housing was also found to be important in relation to social inequalities:

housing is a crucial site in the day-to-day life of most individuals for the distribution of wealth, control over life circumstances, and access to social resources, as well as being an important factor in processes of social identity formation, and the establishment and maintenance of social relationships. (p. 352)<sup>6</sup>

For example, the quality and quantity of social support received by individuals can be influenced by the suitability of their home for social interaction. Housing that is too crowded to allow private conversation, in which guests are not allowed (for example, in some boarding houses where tenants are not allowed to have visitors) or which is unclean and in disrepair, so the individual is ashamed to invite friends or friends do not

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<sup>a</sup> [www.childfriendlycities.org](http://www.childfriendlycities.org)

<sup>b</sup> [www.unesco.org/most/guic/guicmain.htm](http://www.unesco.org/most/guic/guicmain.htm)

<sup>c</sup> [www.who.dk/healthy-cities](http://www.who.dk/healthy-cities)

<sup>d</sup> [www.neighbourhood.gov.uk/](http://www.neighbourhood.gov.uk/) and

[www.odpm.gov.uk/stellent/groups/odpm\\_urbanpolicy/documents/sectionhomepage/odpm\\_urbanpolicy\\_page.hcsp](http://www.odpm.gov.uk/stellent/groups/odpm_urbanpolicy/documents/sectionhomepage/odpm_urbanpolicy_page.hcsp)

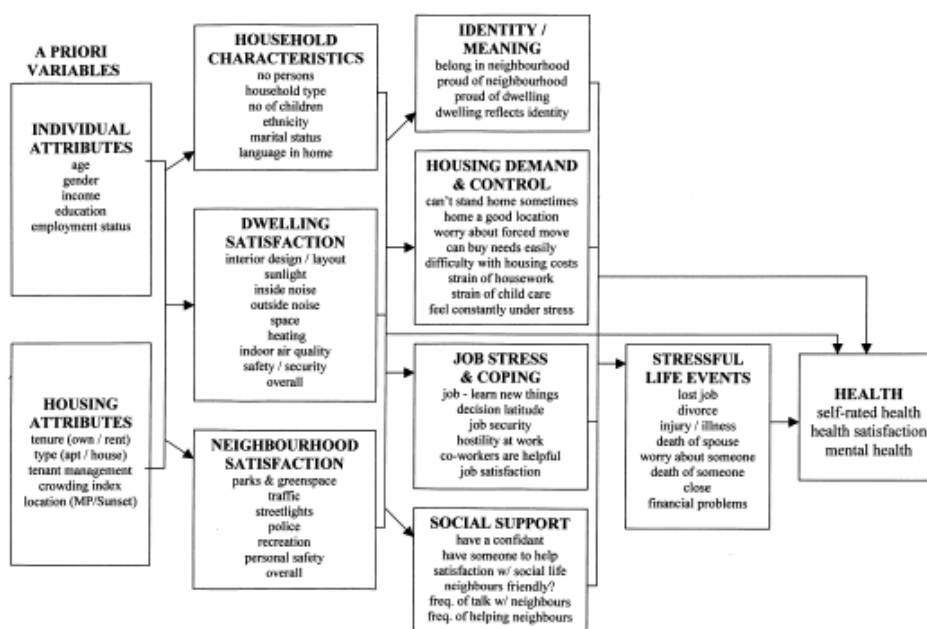
wish to visit, can all impact upon the ability to interact with friends in the home and receive social support. Dunn concluded:

The importance of housing to the relationship between social support and health, in short, follows from the importance we place on the home as the centre of an individual's meaningful world — as a place to receive guests, as a base for day-to-day life, and as an expression of their own self-identity. (p. 356) <sup>6</sup>

Research has demonstrated the importance, in relieving stress and enhancing one's health, of being able to exercise control in the course of one's job. Dunn argued that homes are similarly important because they are the one place that people might have a sense of control over the space around them. This is particularly important for people who work in jobs in which they have little control over their work environment, which is most likely to be the case for people in low-status jobs.

Dunn and Hayes developed a framework for how housing can influence health by contributing to the construction of identity and meaning, the experiences of stress and control, and the receipt of social support. <sup>9</sup>. Their model is reproduced in Figure 1.

**Figure 1: A model for housing and health**



Source: Dunn and Hayes, 2000, p.565 <sup>9</sup>

Dunn and colleagues tested their model of housing and health by surveying residents from Vancouver neighbourhoods. <sup>9 10</sup> Their research suggested that housing is a significant engine of social inequality that has both material and psychosocial dimensions which may contribute to health differences. Their research indicated that the meaningful dimension of housing (including satisfaction and sense of control) was empirically linked to self-reported physical and mental health. After controlling for age, gender and education, housing tenure, housing demand and housing control were associated with both physical and mental health, while neighbour friendliness was also associated with mental health. Dunn and Hayes found that housing dimensions did not contribute to health as strongly as self-assessed stress and social support. However, they suggested that

housing factors may act to directly and indirectly modify these influences on health status.<sup>9 10</sup> The relevance of Dunn and Hayes' model for drug use is apparent.

Mullins, Western and Broadbent, from the Australian Housing and Urban Research Institute, reviewed evidence for the association between housing and nine key socio-cultural outcomes: community, crime, poverty, social exclusion, perceived well-being (subjective quality of life), anomie, health, education and labour force participation.<sup>8</sup> They described their 'main' conclusion as being 'the need for caution in claiming a causal link between housing and non-housing outcomes' (p. 4).<sup>8</sup> While relationships were found between housing and these socio-cultural outcomes, some of which appeared causal, Mullins and colleagues cautioned that, in most cases, the relationships could be explained by characteristics of the people living in the particular types of housing rather than the housing itself. Therefore they argued that changing housing might not, in itself, change the associated social problems. Further, they noted that the quantity and quality of evidence that does exist are variable, so conclusions need to be drawn with caution. Given these overriding cautions, Mullins and colleagues did conclude that clear relationships were found in some instances:

from the evidence reviewed, there does appear to be a clear relationship between housing and crime, housing and education, housing and health, housing and social exclusion, and housing and poverty. A relationship has also been demonstrated between housing and labour markets, but it is imprecise. The relationship between housing and community — a critical relationship for policy purposes — is also vague. The nature of the relationship between housing and perceived well-being, and housing and anomie, is not apparent because of the absence of research.

With regard to causality, housing has been shown to have a clear negative impact upon residents' health, and upon the educational attainment of children, but in both cases this happens under very specific circumstances; it occurs in the poorest quality housing; that which accommodates the most disadvantaged. (p. 4)<sup>8</sup>

With regard to crime, Mullins and colleagues concluded that housing does not *cause* crime, but that areas with high rates of low-income and public housing tend to have higher than average crime rates, and some physical features of housing can facilitate crime. For example, fire escapes on apartment blocks facilitate robbery, play areas that do not facilitate parental supervision can make children vulnerable to assault.<sup>8</sup> Much of the research examining housing and health is related to physical health (for example, housing that is cold and damp contributes to respiratory ailments). However, some research also indicated that overcrowded housing exacerbates depression, fatigue, family discord and psychological distress. These outcomes could contribute to drug use.

Mullins and colleagues regarded social exclusion as related to housing, largely because poor housing is one of the cluster of problems associated with social exclusion. Housing in this case relates more to locational disadvantage (for example, in metropolitan fringes away from transport, employment, health care and education) rather than the quality of housing. The issue of social exclusion and housing is discussed below. Poverty is also related to housing, in that poorer people can afford poorer housing, and this housing can be in areas of high unemployment with few job prospects.

With links established between educational commitment and attainment and drug use,<sup>11</sup> perhaps the impact of housing on educational achievement is of greater import for this report. Mullins and colleagues concluded:

There is a clear link between housing and children's educational attainment, although the socio-economic position of parents is a fundamental intervening variable. Overcrowding, noise and homelessness negatively affect the educational attainment of children. (p. 34)<sup>8</sup>

Arthurson and Jacobs, also from the Australian Housing and Urban Research Institute, conducted a literature review on the relevance of social exclusion for housing policy.<sup>7</sup> Their summary table showing key elements of housing, their relationship to social exclusion and the resulting outcomes is presented in Table 1. The table highlights that inadequate housing affects the experience of stigma, participation in recreational activities, education, access to employment, and homelessness. Arthurson and Jacobs argued that the interconnected and relational nature of the concept of social exclusion provides an argument for the need for coordination between housing policies and other social policies:

the concept of social exclusion can be used to endorse housing policies to adopt a multi-agency or "joined up" government approach in which problems are not tackled in isolation but addressed at the source. Such approaches recognise the complexity and interrelated nature of inequality. Thus, policy interventions to address social exclusion stress the need to coordinate housing policy with investment in education, transport, employment and training and crime prevention. (p. ii)<sup>7</sup>

**Table 1: Key elements of housing and its relationship to social exclusion**

Key elements of housing	Relationship to social exclusion	Outcomes
<i>Cost/ affordability</i> Capacity of individuals/ households to meet housing costs out of available income and have sufficient income to meet other basic needs, e.g. food, clothing, education and health care	<ul style="list-style-type: none"> <li>• Rent-setting policies and practice — for low-income households if rental payments in relation to income are too high</li> <li>• Reduced income available to spend on other factors, e.g. health and food</li> <li>• Participation in consumption and recreational activities compromised</li> <li>• Inability to pay rent/arrears</li> <li>• Poverty traps, i.e. social housing rents rise for tenants on welfare benefits as income increases. Provides disincentive to move from welfare benefits to paid employment</li> <li>• Homeownership policies — when mortgage repayments for low-income homebuyers in relation to income are too high, have assets but income-poor</li> </ul>	<ul style="list-style-type: none"> <li>• Poor health, education</li> <li>• Poverty</li> <li>• Eviction/ homelessness</li> <li>• Trapped on benefits</li> <li>• Poverty</li> <li>• Poor health</li> <li>• Eviction/ homelessness</li> </ul>
<i>Accessibility/ availability</i> Refers to whether or not low-income housing is available to meet demand. Also whether households can move to other dwellings within same or between different tenures	<ul style="list-style-type: none"> <li>• Lack of access to affordable housing</li> <li>• Needs-based allocation policies for social housing potentially inclusive but lead to stigma, poverty concentrations</li> <li>• As home ownership declines, people who would have become home owners remain renting in private rental — displaces lower-income tenants in other tenures</li> </ul>	<ul style="list-style-type: none"> <li>• Homelessness</li> <li>• Poverty</li> <li>• Residualisation</li> <li>• Poverty</li> </ul>
<i>Security of tenure</i> Extent to which home owners, purchasers or renters are guaranteed continued occupation of housing	<ul style="list-style-type: none"> <li>• Where no security of tenure, families may have to move sporadically</li> <li>• Insecure accommodation may affect an ability to maintain employment</li> </ul>	<ul style="list-style-type: none"> <li>• Educational outcomes compromised</li> <li>• Income levels likely to be affected adversely</li> </ul>
<i>Appropriateness</i> Refers to whether housing meets needs of occupants in terms of: <ul style="list-style-type: none"> <li>• appearance</li> <li>• locality</li> <li>• quality</li> <li>• suitability: household size/age of occupants</li> </ul>	<ul style="list-style-type: none"> <li>• Concentration effects, impoverished social networks, employer stigma</li> <li>• Lack of services, e.g. shops, banks</li> <li>• Poor social and physical environments due to inadequately maintained housing</li> <li>• Overcrowding</li> </ul>	<ul style="list-style-type: none"> <li>• Access to employment, education and other services compromised</li> <li>• Poor health, educational, employment prospects</li> <li>• Lack of mobility</li> </ul>

Source: 'Social exclusion and housing', p. 16<sup>7</sup>

There are few studies that directly investigate the effects of housing on drug use. Research has linked housing conditions during childhood to lung cancer, although most of this association appears to be due to socio-economic position in adulthood.<sup>12</sup> An Australian Housing and Urban Research Institute study by Bessant, Coupland, Dalton and colleagues is investigating how accommodation options affect access to services and

the well-being of heroin users.<sup>13</sup> Conclusions based on their review of the literature and qualitative data suggest that secure and suitable housing has a number of specific benefits for heroin users. Good housing enabled heroin users to look beyond the 'survival mode' and was associated with a range of general health benefits (including better nutrition, adequate sleep and improved personal hygiene) and mental health benefits (homelessness was associated with feeling depressed, 'having no future' and low self-esteem). Good housing could minimise the potential for drug- and injecting-related harm. For example, heroin users indicated that having access to a 'home', or at least a protected environment in which to inject, affected their ability to keep a supply of clean injecting equipment available. Further, housing influenced the degree of control heroin users had over their environment; for example, enabling them to limit the number of other people present and thereby affecting opportunities for sharing injecting equipment. Injecting in public places or squats, on the other hand, was associated with high-risk injecting practices. Public injecting has been associated with injecting quickly and furtively in dark places with implications for safety of injecting and disposal of injecting equipment. With regard to squats:

In this environment, drug use often involves groups of people. Consequently, users may be more likely to share injecting equipment and higher volumes of used injecting equipment may result in an increased risk of needle-stick injuries. Furthermore, squats are frequently littered with discarded needles, needle-stick injuries posing a very real public health threat. (p. 51)<sup>13</sup>

Further, housing was described as making a significant contribution to alleviating social disadvantage by enhancing an individual's capacity to take advantage of education, employment and other opportunities.

Bessant, Coupland, Dalton and colleagues also reviewed the literature on the relationship between drug use and homelessness as part of their study of heroin users and housing. They outlined four broad ways in which homelessness and drug use might interact:

- Drug use can act as a precursor to homelessness, where an individual's drug use results in financial difficulties or relationship problems which then contribute to becoming homeless.
- Drug use can begin as a way of coping with homelessness (for example, self-medication).
- Homelessness can exacerbate drug use and associated problems (and vice versa) via its impact on an individual's ability to access health and welfare services.
- Homelessness can exacerbate problems associated with drug use as it makes drug users more vulnerable to problematic drug use and chaotic and dangerous drug-using practices.<sup>13</sup>

In summary, the research on the impacts of housing on health and social outcomes suggests that housing quality can impact upon a number of risk factors for drug abuse, including educational achievement, employment, participation in recreational activities, stress, social supports, self-identity and psychological health. However, little research has concentrated on housing as an aetiological risk factor for drug abuse. Housing does appear to be important, however, for the health and welfare of drug users, providing a safe and stable environment in what can be an otherwise chaotic life.<sup>14</sup>

## Spatial Patterns

The spatial patterns of housing discussed in this section are (a) the concentration of public housing,<sup>e</sup> (b) suburban sprawl, and (c) geographic isolation in rural and remote communities.

### *Concentration of public housing*

Areas marked by high concentration of public housing have been associated with drug markets, drug use and drug-related problems. In their review of the literature, Bessant and colleagues described how recent research has documented increases in drug-related activity on public housing estates in Australia and international research has documented higher rates of drug use in public housing estates than in the general community.<sup>13</sup> Public housing estates have, in some cases, become “catchment areas” for low-income residents beset by crime and poverty’ (p. 9),<sup>13</sup> with eligibility requirements for public housing meaning that this composition is inevitable. The concentration of disadvantage has resulted in a situation where public-housing estates are stigmatised as ‘centres of crime, poverty and drug use’ (p. 10),<sup>13</sup> which adds to the problems faced by occupants of such estates. In some cases, public-housing estates are becoming a wasted resource with people in need of public housing refusing vacancies out of fear of exposure to such environments. For example, Bessant and colleagues reported how acceptances of public housing on inner-city estates in the City of Yarra (Melbourne) as a percentage of offers ranged from 17 to 50 per cent, depending upon the reputation of the area.<sup>13</sup> Accordingly, they concluded that drug use and drug markets in some public-housing estates have made them so unpopular that the capacity of public housing authorities to provide secure, affordable housing has been diminished.<sup>15</sup>

Dalton and Rowe discussed how the illicit drug trade has undermined public housing in Australia, where some housing estates have become established centres of heroin dealing and drug use.<sup>15</sup> They reported that significant problems have resulted, as applicants have rejected offers of housing on the estates, tenants have applied for transfers, and housing officers have faced workplace occupational health and safety issues. Dalton and Rowe’s qualitative research with heroin users in public housing highlighted four reasons for the attraction of high-rise, public-housing estates to drug dealers: their metropolitan location, making them geographically accessible; the physical design incorporating stairwells, lifts, utility rooms, walkways and foyers, which make police operations difficult; the shared suspicion of law enforcement among high-rise residents — an ‘us and them’ mentality — which enables news of police operations to spread quickly; and internal demand for drugs among the residents.<sup>15</sup>

From a developmental perspective, illicit drug markets in areas with a high concentration of public housing are clearly an environmental risk factor for the children and young people growing up in those areas. These young people are exposed to norms of drug use and criminal behaviour as well as to high levels of drug availability. In such areas, there is a need to (a) address the existence of illicit drug markets in public housing estates, and (b) reduce the concentration of public housing in areas of high concentration.

Dalton and Rowe outlined two strategies for addressing the illicit drug trade in housing estates. These two approaches are not mutually exclusive. The first approach was to renovate the existing ‘social arrangement’ through additional security measures aimed at

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<sup>e</sup> The more general issue of geographic concentration of economically disadvantage people into disadvantaged communities is discussed in Chapter 4.

pushing the drug trade out of the estates and introducing programs that renew community amenity and participation. Dalton and Rowe described how the Office of Housing in partnership with the Victorian Police and non-government organisations have been renovating the existing social arrangements of estates via increased security (including electronic card access, 24-hour security presence, locking toilets, security cameras) and a tenancy verification program. While these actions have reportedly improved the situation, Dalton and Rowe suggested that they have been insufficient and that the problem would return when police turned their attention elsewhere. The second approach was to establish a new 'social arrangement' outside the estates to 'pull' drug sellers elsewhere. Dalton and Rowe acknowledged that the proposal of a regulated heroin market is controversial. However, they cited the regulation of the illicit sex industry as an example to suggest that a regulated heroin market is feasible.<sup>15</sup>

In relation to reducing the concentration of public housing, Randolph and colleagues from the Australian Housing and Urban Research Institute described a range of strategies for 'tenure diversification' or the transfer of public housing to alternative forms of ownership.<sup>16</sup> They noted that there is little research on the benefits of tenure diversification, but argued that it can achieve a range of inter-related objectives, including (among others):

- breaking up concentrations of public housing
- encouraging home ownership and alternative housing assistance options for lower income households
- achieving a greater social mix and balance
- reducing stigma and 'normalising' estates.

Fauth, Leventhal and Brooks-Gunn reported on an analysis of data from an evaluation of a city-wide desegregation of public housing in Yonkers, New York.<sup>17</sup> The evaluation investigated differences in a range of outcomes between families who were relocated to low-poverty neighbourhoods ('movers', n=173 families) and demographically similar families who remained in high-poverty neighbourhoods ('stayers', n=142 families). Data were collected two years after movers were relocated. Analyses controlled for background variables at the individual level (age, gender, race/ethnicity, education) and family level (gender of household head, number of children in household). This is one of the few studies of public housing that explicitly investigated the impact of relocation on families in relation to a drug outcome (alcohol-abuse symptoms). In comparison with stayers, movers were significantly less likely to report they perceived their neighbourhoods as dangerous, to report victimisation within the previous year, to characterise their neighbourhoods as disordered or to report problems with housing quality. Movers were more likely to view their new neighbourhoods as cohesive and were more satisfied with neighbourhood resources. In terms of personal outcomes, movers reported significantly less alcohol-abuse symptoms, fewer physical health problems, higher rates of employment, and less cash assistance. There was no significant difference between the groups with respect to drug-abuse symptoms. Fauth and colleagues posited that a range of social factors contributed to the reduction in alcohol-abuse symptoms among movers relative to stayers:

Program effects on neighborhood disorder and cohesion may have influenced movers' alcohol abuse rates as well. That is, alcohol abuse may be more heavily sanctioned in the low-poverty mover neighborhoods compared with the high-poverty stayer neighborhoods, where respondents were more likely to experience

public drinking and drugging and less likely to experience shared values and problem solving. Moreover, alcohol use may be a coping strategy used by residents of unsafe, impoverished neighborhoods. Removing adults from this stressful environment may have led to less frequent use of alcohol (compared with stayers). (p. 2278)<sup>17</sup>

It was noted that movers reported significantly less frequent social interactions with neighbours than stayers. Fauth and colleagues speculated that this situation might improve with time:

As time has progressed and the contention over the desegregation efforts has been assuaged, movers may be gradually accepted into their middle-income neighborhoods, which will enable them to form connections with their neighbors. (p. 2280)<sup>17</sup>

Overall, the authors concluded that rehousing low-income minority families in low-poverty, primarily “White” areas is an effective strategy for improving adults’ economic well-being, safety and satisfaction with resources. Their results suggest that desegregating public housing can have positive impacts upon alcohol abuse. There was no evidence of positive impacts on illicit drug abuse, which seems more difficult to modify.

### ***Suburban sprawl***

Cities have spread out creating what is known as ‘suburban sprawl’. This is partly due to increases in population, but also the result of earlier beliefs that high-density living was ‘unhealthy’ for individuals and communities. However, more recently, the negative impacts of suburban sprawl have been identified. For example, suburban sprawl has reportedly reduced social connections, civic participation and access to services and facilities.<sup>18</sup> These factors have contributed to outer suburban areas becoming less attractive places to live and property values have declined, making them affordable to low-income people. This in turn has contributed to concentrations of disadvantage in the outer suburbs and social exclusion of low-income people, particularly when public transport is inadequate. Consequently, density and transport have become issues in research on the social determinants of health.<sup>19</sup> As argued by Newman:

Today, the problems of our settlements (environmental, social and economic) revolve around the struggle to maintain and develop community. Health issues are now being related to this loss of community as well. Our research has tried to indicate that there is a link between this loss of community and the density/transport base of a city. When densities reach such low levels that settlements are car dependent, then the notions of a community become very difficult to maintain as the opportunities for ‘accidental interaction’ are reduced, even for children. (p. 161)<sup>20</sup>

Newman’s research has indicated that densities of less than 30 people per hectare made walking and public transport unviable. He acknowledged that a sense of community can exist at density levels below 30 people per hectare, but noted that this was largely based upon planned trips and mainly dependent upon motor cars. Newman asserted that most of Australia’s inner suburbs are above the critical density of 30 per hectare, but the new outer suburbs are all below 12 to 15 per hectare and continue to be planned that way.

Few studies have looked specifically at drug use by suburban youth,<sup>21 22</sup> and no research has looked specifically at the impact of suburban sprawl on drug use. Interestingly, Luthar and D'Avanzo's study in the United States of America identified higher rates of drug use, anxiety and depression among a sample of affluent suburban youth relative to socio-economically disadvantaged inner-city youth, as well as 'surprisingly high' adjustment problems.<sup>21</sup> However, the study did not investigate the role of suburban sprawl in this result. Whether or not suburban sprawl and transport are relevant to drug use is an issue of speculation. However, if they do affect the well-being of communities via their impact on social supports, social cohesion and stress and contribute to social exclusion via their impact on access to resources for education, health, employment and recreation, there is logic in also considering their influence on drug use.

### ***Rural/remote location***

Health differentials have been found between people in urban areas and people in rural/remote areas in the United Kingdom,<sup>23</sup> the United States<sup>24</sup> and Australia.<sup>25</sup> Health has been found to be particularly poor in remote areas where infrastructure is sparse.<sup>26</sup> Sundquist and Frank reviewed the international literature on urbanisation and alcohol and drug abuse, and found mixed results.<sup>27</sup> The relationship between urban and rural use and outcomes varied with the type of drug and the country. A number of studies reported finding higher rates of use and problems in urban areas compared with rural areas. For example, a study from Britain identified higher rates of drug abuse in urban areas than in rural areas, a finding attributable largely to more adverse living circumstances among individuals in urban environments.<sup>27</sup>

Data from the 1992 National Longitudinal Alcohol Epidemiologic Study identified that the proportion of adult drinkers in the United States of America was higher in urban than in rural areas. A cross-national comparison between the United States and the United Kingdom showed that living in an urban setting increased the occurrence of drug dependence. The opposite pattern was also reported in other research. For example, a study in North Carolina found higher rates of drug dependence but lower rates of alcohol dependence in urban areas relative to rural areas. Other studies have found little or no difference between alcohol and drug outcomes in urban and rural areas. A recent literature review suggested that a variety of socio-demographic factors were more powerful predictors of substance abuse than the location of urban or rural residence. Other research has demonstrated how the relationship between rural and urban drug and alcohol use is changing in some areas. For example, in Galicia, Spain, the traditional rural model of drinking predominated even though an urban consumer model was growing quickly. Research has also reported interactions between urban/rural location and other variables (for example, education). In South Korea, alcoholism among older men was associated with lower education in the rural sample and higher education in the urban sample.

Data from the 2001 National Drug Strategy Household Survey identified slightly higher rates of smoking and risky/harmful alcohol use in rural areas relative to urban areas, but slightly higher rates of illicit drug use in urban areas (Table 2).<sup>28</sup> The higher rates of risky drinking in rural areas were reflected in higher rates of alcohol-attributable deaths among 15–24 year olds in rural areas relative to metropolitan areas.<sup>29</sup> Yet the urban–rural difference in illicit drug use appears to be reducing. Donnermeyer, Barclay and Jobes' study of drug-related offences in Australia suggested that illicit drug use appears to be becoming more widespread in rural areas of Australia.<sup>30</sup>

**Table 2: Drug use in urban vs rural/remote areas**

	Geography	
	Urban	Rural/ remote
<b>Tobacco smoking status</b>		
Smoker	23	25
Not recent or never smoker	78	75
<b>Risk of long-term alcohol-related harm</b>		
Abstainer	18	17
Low risk	73	71
Risky/high risk	9	11
<b>Risk of short-term alcohol-related harm</b>		
Abstainer	18	17
Low risk	49	47
Risky/high risk	34	36
<b>Use of any illicit drug</b>		
Recent use	17	16
Not used recently/ever	83	84
<b>Use of any illicit drug except marijuana/cannabis</b>		
Recent use	9	7
Not used recently/ever	91	93
<b>Use of marijuana/cannabis</b>		
Recent use	13	12
Not used recently/ever	87	88

*Source:* 2001 National Drug Strategy Household Survey, 2002, p. 110 <sup>28</sup>

Given that urban/rural differences in drug-use patterns are not consistent, it is likely that differences exist only in certain contexts. Urban versus rural/remote location could affect drug use when the location is associated with access to resources, <sup>31</sup> unemployment, <sup>32</sup> boredom, <sup>33 34</sup> social capital <sup>35</sup> or social isolation. <sup>36</sup> For example, qualitative research that was part of a state-wide study of youth access to services in New South Wales reported that rural adolescents expressed concerns about limited educational, employment and recreational opportunities. These issues were not raised by the urban adolescents in the study. Further, these access issues were believed to contribute to the adolescents' risk-taking behaviour. For example, a 15-year-old girl commented: 'A lot of people have nothing to do, so they just get drunk, stoned or on drugs' (p. 7). <sup>31</sup> The authors concluded:

Major structural changes are required to create educational, employment and recreational opportunities in rural areas so that more adolescents are actively engaged which should reduce the incidence of risk-taking behaviour attributable to 'having nothing to do'. (p. 8) <sup>31</sup>

## Community physical disorder

The 'broken windows' theory of community crime purports that areas that appear disorderly attract crime because they portray a message that the community does not care. <sup>37</sup> Disorder can be physical or behavioural. Physical indicators include graffiti, litter and disrepair. Behavioural indicators include public urination and loutish behaviour. The

situation is exacerbated when law-abiding citizens avoid such areas for fear of crime, thus reducing the informal controls in the community. This theory has been the basis for the use of strict enforcement of minor criminal conduct (that is, zero-tolerance policing) to reduce crime.<sup>38 39</sup>

In Chicago, Sampson and colleagues have investigated the impact of physical disorder on crime, and Cohen and colleagues have investigated the impact of physical disorder on health outcomes. Both investigations also considered other community variables, in particular, collective efficacy.<sup>40-43</sup>

Cohen, Farley and Mason analysed data from the Project on Human Development to investigate whether the social and physical environment mediated the relationship between socio-economic status and health (mortality from cardiovascular disease and homicide).<sup>40</sup> Predictor variables included concentrated disadvantage, residential stability, immigrant concentration, collective efficacy and 'broken windows' (boarded-up stores and homes, litter and graffiti). The authors concluded that 'The constructs of collective efficacy and broken windows are likely to be two mechanisms through which relative poverty leads to poor health' (p. 1639).<sup>40</sup> They suggested some possible reasons for the observed association between broken windows and physical health. For example, the physical environment could affect a person's ability to develop supportive relationships with one's neighbours, as people might be more likely to spend time outdoors when the neighbourhood environment is pleasant. This would increase the likelihood that they would see and meet their neighbours and gain some familiarity with them or even have positive social interactions. Similarly, an unpleasant physical environment might not be conducive to physical activity, thus impacting on physical and mental health. Further, an interaction between physical disorder and collective efficacy was identified, such that collective efficacy did not exert an independent effect on health in deteriorated neighbourhoods. This result points to the importance of the physical environment for community strength:

the lack of an independent effect of collective efficacy in deteriorated neighborhoods suggests that it may not be a viable leverage point for reducing premature mortality in these conditions. The physical stigma of poverty and the implied tolerance of deviant behaviors in areas marked by graffiti and boarded-up homes may overwhelm the ability of people to act cooperatively for the greater good. The physical environment may act as a threshold such that beyond a certain point of deterioration, it may not be possible to actually initiate viable or sustainable voluntary organizations where there are no appropriate physical infrastructures to house them nor complementary structures that could provide additional support. (p. 1639)<sup>40</sup>

Sampson and colleagues conducted similar research examining physical and social disorder, the relationship between the two, and their respective impacts on crime.<sup>41-43</sup> They found that physical and social disorder and crime arose from concentrated poverty and the associated absence of social resources.<sup>45</sup> Specific findings were:

- Social disorder and physical disorder were directly linked to the level of robbery but not to homicide.
- Where collective efficacy was strong, levels of physical and social disorder were correspondingly low (after controlling for socio-demographic characteristics and

residents' perceptions of how much crime and disorder there was in the neighbourhood). Collective efficacy appeared to deter disorder.

- In neighbourhoods where collective efficacy was strong, rates of violence were low regardless of socio-demographic composition and the amount of disorder observed.

These findings did not support the 'broken windows' theory that disorder directly causes crime. Rather, they suggested that disorder and crime have similar roots. Consequently, reducing disorder might reduce crime indirectly by stabilising neighbourhoods via collective efficacy.<sup>43</sup> Sampson, Morenoff and Gannon-Rowley concluded with respect to the relationship between physical disorder and crime that further research is needed to determine whether 'disorder is etiologically analogous to crime, a cause of crime, a mechanism that has independent consequences for mental health, or some combination thereof' (p. 465).<sup>44</sup>

In summary, physical disorder, social disorder and concentrated poverty tend to be correlated and to each contribute to crime. Sampson and colleagues argued that collective efficacy can offset these impacts on crime, while Cohen and colleagues' research suggested that collective efficacy loses its impact when physical disorder is extensive. Research specifically investigating the impact of physical disorder on drug use was not found. However, given the relationship between drug abuse and crime (Chapter 1), physical disorder might be relevant to drug-use behaviours.

## Transport and traffic

The importance of transport for health was reinforced in the 1998 Acheson Report on the effect of poverty on health.<sup>45</sup> Acheson stated that, of all the changes he would wish to make, improving public transport was the major priority, as it would have the biggest impact on the lives of the poorest communities. Transport poverty can affect health via its impact on social exclusion, access to services, and physical exercise, all of which can contribute to anxiety, stress, depression, loneliness and a general reduction in well-being.<sup>18 46 47</sup> In relation to social exclusion, the Office of the United Kingdom's Deputy Prime Minister reported that:

Poor transport contributes to social exclusion in two ways. First, it can stop people from participating in work, learning, health care, food shopping and other activities, such as volunteering and community participation. Second, people in deprived communities also suffer the worst effects of road traffic through pollution and pedestrian accidents. Poor transport has costs for individuals, businesses, communities and the state.

From UK Report on Transport and Social Exclusion<sup>48</sup>

By their impact on social exclusion, transport policies can also exacerbate socio-economic and health inequalities, as those who cannot afford a car have restricted access to work and services. As reported by the United Kingdom Social Exclusion Unit, one in four people experiences difficulty accessing mental health services through an inability to pay for transport.<sup>49</sup>

Research from the Australian Housing and Urban Research Institute examined how transport (among other factors) can create disincentives and barriers to taking up paid work or working longer. They interviewed 400 renters (in both the public and private sectors in Sydney and Melbourne) who were actively seeking work.

location of housing relative to jobs can contribute to work disincentives, with a majority of respondents stating that this provided one or more of the three main difficulties they faced in getting a job. Most respondents did not own a car and, unless jobs were located nearby, searching for and getting to work posed a major problem. Unemployed renters overwhelmingly saw travel as the main additional cost they faced when they got a job. This may relate to either the costs of public transport or the perceived need to drive to work. (p. 53)<sup>50</sup>

Studies in the United States and in Europe have shown that people who live in streets with less traffic (speed and volume) have more social contacts, a better quality of life (measured, for example, by counts of street activities, open windows, flower boxes and other signs of personal care) and are perceived by families to be more friendly, safer and less stressful.<sup>18</sup>

Dora and Phillips reviewed the research on the impacts of traffic density on children's development.<sup>47</sup> They noted how children are decreasingly allowed to walk in their community, as parents are worried about accidents. The space within which children can move freely shrinks significantly as street traffic increases. As parents have become busier and have less spare time, children's physical activity and social contacts have diminished. These trends reportedly have long-term impacts on physical well-being. They hinder personal development, as children spend less time interacting with peers, and affect children's stamina, alertness at school and academic performance.<sup>47</sup> Access to public transport and the perceived safety of public transport can also be a barrier to young people participating in activities outside school hours. Children with parents who work long hours or who do not own a car would be expected to be disproportionately affected by a lack of public transport.

No studies directly linking the effects of transport systems on drug use were found. However, the impacts of transport and traffic on mental health, child development and social exclusion appear relevant to drug use. Further, research on drug-driving, drink-driving and violence around licensed premises highlights the importance of the availability of public transport in reducing these problems.<sup>51 52</sup> Strategies such as the use of sniffer dogs on trains could be problematic if they result in an increase in drug-driving.

## **Public spaces**

As discussed by Malone, public spaces can facilitate the development of children and young people:

Ideally towns and cities should be the place where children and youth can socialise, observe and learn about how society functions and contribute to the cultural fabric of a community. They should also be sites where they find refuge, discover nature and find tolerant and caring adults who support them.<sup>53</sup>

However, research on young people in local environments has indicated that the neighbourhood, which once served as a resource for recreation and leisure, no longer supports or provides stimulation for young people.<sup>54</sup> When young people do congregate in public spaces, they tend to be moved on. This can result in their moving to secluded places — separate from informal, adult social control — where they are more likely to be exposed to antisocial and drug-using influences.<sup>55 56</sup> The 2001 National Drug Strategy Household Survey indicated that young people report alcohol and drug use in public places. Fourteen per cent of adolescent males and 11 per cent of adolescent females

reported that they usually drank alcohol in public places; and 20 per cent of all male respondents and 14 per cent of all female respondents reported that they smoked cannabis in public places.<sup>28</sup>

Despite concern about the issue of youth and public spaces,<sup>55</sup> research evaluating the impacts of the design and management of public spaces on drug use was not found. However, research and debate have examined the issue of public illicit drug use.<sup>57-58</sup> In particular, there have been concerns about balancing the public amenity concerns of the general community with the health concerns of users. While supervised injecting centres address both the health and public amenity impacts of public injecting,<sup>59-60</sup> they have often met with resistance. The use of displacement strategies by police presents an alternative approach to reducing public illicit drug use, which could satisfy community pressures to address public drug markets and drug use.<sup>61</sup> However, there are concerns that such an approach would be at the expense of the health and well-being of drug users.<sup>62</sup>

Drinking or alcohol-related problems — such as assaults — in public spaces have also been an issue of concern, particularly for police.<sup>63</sup> Factors found to contribute to alcohol-related problems in public spaces have included alcohol outlet density,<sup>64</sup> long trading hours<sup>65-66</sup> and the social environment of licensed premises.<sup>67</sup> Numerous strategies have been employed in attempts to minimise the harm associated with public alcohol consumption or intoxicated people in public. These include server training programs (although Stockwell has noted that these are of limited value in the absence of liquor law enforcement);<sup>68</sup> restrictions on opening hours of licensed premises;<sup>66-69</sup> restricting price discounting ('happy hours');<sup>70</sup> enforcement of compliance with liquor licence conditions;<sup>71</sup> enforcement of liquor laws;<sup>68</sup> restricting liquor outlet density;<sup>64-72-78</sup> liquor accords;<sup>79-80</sup> night patrols for getting intoxicated people off the streets;<sup>81</sup> police enforcement of public order legislation (although problems with this approach have been identified for Aboriginal communities);<sup>82-83</sup> monitoring of public spaces by youth-friendly people other than the police;<sup>84</sup> urban design and planning in collaboration with young people to provide safe venues for young people to 'hang out';<sup>55-84</sup> restricting the possession and use of alcohol to zero in a whole community, creating what is known as a 'Dry Community' or 'Dry Place';<sup>85-87</sup> and prohibiting the consumption of alcohol in a public place (these are known as 'alcohol-free zones').<sup>88-91</sup> These strategies are discussed elsewhere and so will not be examined here.<sup>63-92-93</sup>

## Summary and frameworks for drug use

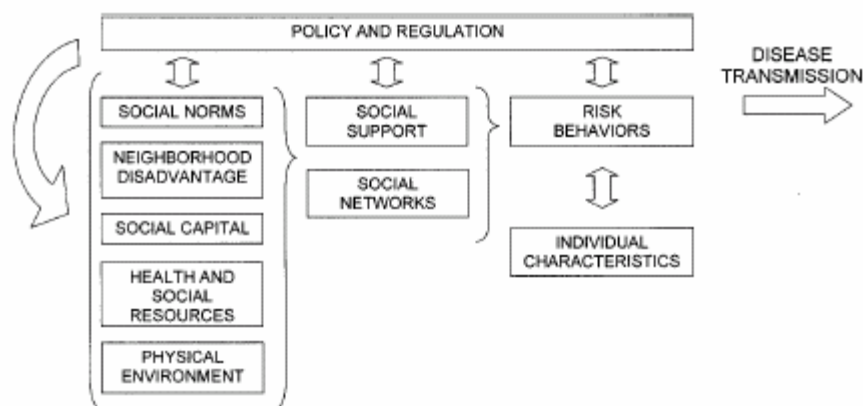
The research presented above outlined how aspects of the physical environment influence a range of individual outcomes (for example, self-identity, stress, mental and physical health, social isolation, educational achievement, employment) and community outcomes (for example, crime rates, drug markets, civic networks). These are summarised in Table 3. While research in this area is limited, there is a suggestion that the physical environment might influence drug-use behaviours indirectly via its impact on these individual and community outcomes. However, the physical environment is only one aspect of the environment and its impact on risk factors for problematic drug use will depend upon other contextual factors such as the social and policy environments.

**Table 3: Summary of the impacts of the physical environment on individuals and the social environment**

Aspect of the physical environment	General impacts
<b>Housing</b>	
<ul style="list-style-type: none"> <li>Housing quality</li> </ul>	Self-identity and stigma Depression Social relationships and support Social inequalities
<ul style="list-style-type: none"> <li>Overcrowding</li> </ul>	Depression Family discord Noise, which impacts: <ul style="list-style-type: none"> <li>children's academic attainment</li> <li>stress</li> </ul>
<ul style="list-style-type: none"> <li>Cost</li> <li>Availability</li> </ul>	Exacerbates poverty and social inequalities Homelessness Insecurity Mobility, which impacts children's academic achievement and socialisation
<b>Spatial patterns</b>	
<ul style="list-style-type: none"> <li>Concentrated public housing</li> </ul>	Concentration of disadvantage Crime rates Illicit-drug markets Identity and self-esteem Social norms regarding education, employment, crime, drug use
<ul style="list-style-type: none"> <li>Geographic isolation: in suburbs, rural and remote communities</li> </ul>	Access to resources and opportunities that could reduce: <ul style="list-style-type: none"> <li>boredom</li> <li>unemployment</li> <li>mental health problems</li> <li>social isolation</li> </ul>
<ul style="list-style-type: none"> <li>Community physical disorder</li> </ul>	Community perceived as unsafe and unappealing so people stay indoors, resulting in: <ul style="list-style-type: none"> <li>reduced social interactions and networks</li> <li>reduced collective efficacy (a two-way relationship, although collective efficacy can lose its impact when physical disorder is substantial)</li> <li>reduced exercise</li> </ul>
<b>Transport and traffic</b>	
<ul style="list-style-type: none"> <li>Increased car dependency and traffic flow</li> </ul>	Areas perceived as less safe and friendly → Less walking → Less public interaction  Increased stress  Constraints on child development: <ul style="list-style-type: none"> <li>less exploration of the environment</li> <li>reduced social contacts</li> <li>reduced academic performance</li> </ul>
<ul style="list-style-type: none"> <li>Exacerbation of impacts of low SES</li> </ul>	Effect on drink-driving and drug-driving. Reduced access to: <ul style="list-style-type: none"> <li>job interviews and employment opportunities</li> <li>social networks → loneliness, depression</li> <li>recreation → boredom, motivation</li> </ul>
<b>Public spaces</b>	
<ul style="list-style-type: none"> <li>Lack of public spaces in which young people can socialise in the presence of adults</li> </ul>	Increased exposure to drug markets and antisocial youth Decreased informal social controls from adults and adult role models

Galea, Ahern and Vlahov presented a conceptual framework of the determinants of drug use and related HIV risks. Their framework incorporates the physical environment as well as structural factors (for example, the availability of services) and features of the social environment (for example, social norms, neighbourhood disadvantage, social capital) (Figure 2).<sup>94</sup> Galea and colleagues discussed how the contextual variables, including features of the physical and social environments, are interrelated and interactive and the relationships between them are multidirectional. As such, a full understanding of each variable role in shaping risk behaviours needs to consider the contribution of the other variables in the framework. Multiple factors (for example, social support and social networks) may mediate the relation between the social and physical environment and individual drug-use risk behaviours.

**Figure 2: A conceptual model of the determinants of risk behaviours**



Source: Galea, Ahern, Vlahov, 2003, p. 52<sup>94</sup>

Rhodes has developed a conceptual framework for the 'risk environment' for drug-related harm, which includes the physical, social, economic and policy environments at micro and macro levels (Table 4).<sup>95</sup> He outlined how the physical environment can influence drug use and related outcomes both directly and through interaction with these levels of influence. He described, for example, how drug-related trade and transport networks impact upon the transmission of human immunodeficiency virus (HIV) among injecting drug users. For example, the rapid spread of injecting drug use and HIV throughout Russia and the Ukraine has been related to the globalisation of trade and transport links at the macro level, as well as patterns of migration and tourism. On a micro level, Rhodes described the observations of ethnographic research in an area of the Ukraine:

The immediate physical environment ... comprised open land, a meeting point, between state and private housing, where drug dealing took place often furtively and where drug injecting took place in the absence of running water via 'front-loading' the drug solution directly from a dealer's donor syringe or via the purchase of a ready-filled syringe. A lack of running water has consequences for risk reduction, as does the distribution of drug solutions via front-loading and ready-filled syringes. Each of these drug distribution practices were to some extent shaped by the immediate physical environment as well as by: the geographic separation of drug production and distribution sites; ease of drug

transport; ease of drug measurement; and time urgency when making the transaction from distribution to injection for fear of police intervention. (p. 90) <sup>95</sup>

**Table 4 Rhodes' model of risk environment**

	Micro environment	Macro environment
Physical environment		
Social environment		
Economic environment		
Policy environment		

Source: Rhodes, 2002, p. 89 <sup>95</sup>

## Conclusions

The evidence base for determining the most cost-effective way to build or change the built environment to reduce drug problems is limited. However, the research that is available suggests that issues such as housing, spatial patterns of housing, industries and services, transport and the design and management of public spaces can have direct and indirect influences on drug use. It appears likely that housing, town planning and transport policies can affect the environment in a manner that promotes or prevents drug-use problems. What does this mean for policy and practice? Projects concerned with urban development provide some guidance. For example, UNICEF's Child Friendly Cities program<sup>f</sup> and UNESCO's Growing Up In Cities project<sup>g</sup> emphasise the need for communities to nurture child development, to advocate children's rights and to encourage child participation in urban planning. WHO's Healthy Cities Project<sup>h</sup> is based on a model of 'good governance', which includes broad political commitment, intersectoral planning, city-wide partnerships, community participation, and monitoring and evaluation. These approaches rely upon active participation by community groups as well as by health professionals to ensure child development and health and social outcomes are priorities in urban planning. A particular priority, as is clear from the research described in this chapter, is the need to ensure urban planning policies do not exacerbate existing social and health inequalities by segregating and isolating low-income people. <sup>96</sup> These are general principles, not specific to addressing drug problems, but likely to address problems.

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<sup>f</sup> [www.childfriendlycities.org](http://www.childfriendlycities.org)

<sup>g</sup> [www.unesco.org/most/guic/guicmain.htm](http://www.unesco.org/most/guic/guicmain.htm)

<sup>h</sup> [www.who.dk/healthy-cities](http://www.who.dk/healthy-cities)

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