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second opinion' on the Maiden Lane estate,
THE ARCHITECTURE OF THE MAIDEN LANE ESTATE:
a second opinion

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17th January 1989

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THE ARCHITECTURE OF THE MAIDEN LANE ESTATE : a second opinion

This report is a 'second opinion' on the Maiden Lane estate, following the social survey report, feasibility study and proposals for refurbishment produced by Hunt Thompson Associates in January 1988. It has been researched and written following a request by Gordon Benson and Alan Forsyth, formerly employed by the London Borough of Camden as the project architects for Phase 1 of the scheme, now Benson & Forsyth Architects, for a further view following the Hunt Thompson report. The study draws on the Hunt Thompson social survey, on previous studies of the estate carried out by this Unit, and on some historical material supplied by Benson and Forsyth. We are indebted to Hunt Thompson for making their material freely available to us, and for supporting the idea of further research on the estate although they felt unable to contribute to it financially. Financial support was provided partly by Benson and Forsyth Architects and partly by the Unit for Architectural Studies.

SUMMARY REPORT

Comment on the architectural conclusions of the Hunt Thompson report

1 - The Hunt Thompson Report is in five volumes : four volumes of data and analysis reporting the 'Social Survey', and a one volume Feasibility Study in which summary interpretations are made and proposals put forward. The social survey volumes are substantial, and the data and analysis of good quality, in many ways a model study of its kind. A wide range of architectural, technical, managerial and social issues are covered, and the evidence shows convincingly that there is much malaise and much at fault on the estate. In the Feasibility Study, a wide range of proposals for remedial action is put forward, covering architecture, management, repairs, technical improvements to dwellings, improvement of refuse collection, and many other matters . Most of these proposals are uncontroversial, and are not our concern here. This 'second opinion' is concerned only with the evidence, conclusions and proposals about the

architecture of the estate, and how far it may be held to have contributed to the 'malaise' of the estate.

2 - On architectural matters, the Social Survey volumes offer an abundance of data and commentary on residents' experience of and attitudes to the estate. The key volumes of quantitative data (the 'Quantitative Report' and two supporting data volumes) tell a complex story of attitudes, positive as well as negative, with much variation from one type of resident to another. For example, the data shows (and the text confirms) that the estate is more popular with men than with women, with those without children more than those with children, and with the old more than with the young. It is also far more popular with those who chose to live on the estate than with those who felt they had no choice. The data also shows (and again the text confirms) that on most general architectural evaluations, the majority opinion of the residents is favourable. For example, on the 'general appearance' of dwellings, a strong majority are favourably disposed (69% to 24%), with similar results for the layout of the dwelling (68% to 28%), the design of individual rooms (similar favourable majorities, but varying with the room), and, to a lesser extent, overall satisfaction with the home (57% satisfied to 34% dissatisfied). There are also smaller majorities, but majorities *nonetheless, for liking the estate rather than disliking it* (42% to 38%) and finding the estate friendly rather than unfriendly (43% to 30%). These satisfaction figures may be regarded as unacceptably low, but even so it would be unfair not to record that in spite of the evident 'malaise' of the estate, there are still favourable majorities on many significant aspects of the estate.

3 - There are, on the other hand, majorities of negative opinions on almost all matters concerned with the management and maintenance of the estate, especially cleanliness and tidiness (80% dissatisfied), refuse collection (64% dissatisfied), repair services (62% dissatisfied) and dog nuisance (76% dissatisfied); on problems related to children (76% of families with children specify a problem about children playing on the estate); and on the isolation of the estate (71% complain of transport isolation) and difficulties of access (66% dissatisfied with access for service and emergency vehicles, 55% with parking difficulties). There are also majority dissatisfactions at the level of the dwelling, particularly in relation to practical problems such as soundproofing (63% dissatisfied compared to 32% satisfied) and security (63% to 33%). These specific dissatisfactions contrast with the majority satisfaction on broader design issues.

4 - These findings could fairly be summarised by saying that the main problems of the estate seem to be management-related, but that there are also specific practical problems with dwellings, and problems with the estate layout and its relation to its surroundings. This, by and large is the conclusion drawn in the 'Summary of Main Findings' of the social survey in the Hunt Thompson Quantitative Report (pp 22 - 48).

5 - However, in the summary statistics (p.4) and architectural conclusions (section 3.3) presented in the Feasibility Study (which seems to be the main public presentation document of the report), far more sweeping and damaging conclusions regarding the architecture seem to be implied than are warranted by the evidence. The impression seems to be given :

- first, that there is a general rejection of the architecture of the estate by its residents (for example, by the claim that '71% of tenants describe the estate in negative terms, often with a menacing element' - we might call it the 'Alcatraz view');

- and second, that architecture has been shown to have been a significant cause of the current social 'malaise' of the estate (for example : '...there is overwhelming evidence to suggest that the design of the physical environment is a major factor in contributing to the stressful nature of the estate' Section 3.3.3).

6 - It is hard to see how the evidence of the social survey can justify such bold conclusions. On the first, there is undoubtedly a body of opinion on the estate which dislikes the architecture and expresses its dislike through unfavourable visual comparisons. However, the idea that this is a general view among residents appears to arise from a careless presentation of certain key figures. For example :

a) Reference to p. 96 of the Social Survey Quantitative Report shows that of the '71% of tenants' who 'describe the estate in negative terms, often with a menacing element', by far the largest component of the 'negative descriptions' (which were made in answer to an open question about the 'look' of the estate) are aimed not at the architecture of the estate but at the presence of rubbish and litter, and the fact that the estate has been allowed to become run down and dirty. This is clearly a matter of management, not architecture, and is identified as such in the Quantitative Report (p.101). It may be said that the design of the estate has hampered the efficient collection of rubbish, and thus contributed to a management failure, but to conflate attitudes to rubbish with

'Alcatraz' visual comparisons is misleading. In fact, when complaints about 'rubbish and dirt' are eliminated from the residents' descriptions of the 'look' of the estate, then positive and negative descriptions of the architecture come more or less into balance, with as many favourable as unfavourable (p.99 of Quantitative Report). The adverse impression is heightened by the four-to one preponderance of negative comments presented in the 7 illustrated pages of residents' views on the 'Appearance and Design' of the estate in the Feasibility Study. The failure to distinguish management from design in these figures is unfortunate, since the degree to which residents' negative views should be ascribed to architecture or management is one of the most crucial points at issue.

b) Similarly, the claim that '53% (of residents) express the feeling of living on the estate in negative emotional terms "*depressed, closed in, claustrophobic, imprisoned*' gives the impression that all these negative feelings are directly imputable to the architecture. Reference to p.103 of the Social Survey Quantitative Report shows that only a minority of these expressions refer directly to architecture. Others describe states of mind (being tense, feeling isolated, feeling frustrated) which *may* indeed be caused by the architecture, but are equally likely to be the outcome of the severe social conditions experienced by many on the estate. Indeed, the Quantitative Report (p.104) notes that negative feelings are higher for households with children, while for couples without children there is a majority of positive comment on the feel of the estate. It is clear that social factors are implicated in these negative feelings, and that no grounds have been established for regarding architecture as their main source. On this aspect of the data one might also criticise the Quantitative Report (p.105) for devoting only a single sentence to the 42% of those expressing positive feelings of varying degrees of 'happiness, contentment, (and) satisfaction'.

c) The spontaneously expressed 'main dislikes of the estate' expressed by residents (Quantitative Report p,100) shows very little reference at all to the visual properties of the architecture, though there is much dislike of the isolated location of the estate, and criticism of aspects of its layout. However (as the Quantitative Report makes clear on p.101/102) by far the largest number of such dislikes concern the management of the estate, especially uncleared rubbish, and lack of maintenance and repairs.

7 - Nor is it clear how the second strong architectural conclusion, that architecture has been shown to be a significant cause of the current social malaise of the estate, can be demonstrated from the evidence. In

order to show that architectural design can be blamed for some or all of the malaise of the estate, it is crucial to establish by statistical analysis that the effects of management or social conditions are not being mistaken for the effects of architecture. The analysis presented in the report does not attempt to do this. Although the social survey data presented in the Quantitative Report and its two supporting volumes is very informative and suggestive, the report does not seek to establish lines of inference between the social survey data and the strong conclusions about the effect of the architecture on residents. It is not clear, therefore, on what grounds such conclusions are drawn.

8 - In reviewing the Hunt Thompson report, then, we must draw a sharp distinction between complex picture of the estate presented in the four volumes of the social survey report, and the more simplified and damaging impression of the architecture given by the interpretation of the social survey in the Feasibility study. Although there are many specific problems with the dwellings, and other problems with the estate layout, the general case against the architecture is not made. It follows that the attempt to extend the critique of the estate into a general critique of 'modernism' in architecture, as found in Section 3.3 of the Feasibility Study is not a legitimate inference from the evidence.

Further analysis of the data and the estate

9 - How, then, has the 'malaise' of the estate arisen ? Since it is clear that there *is* substantial malaise (for example, less than 40% of residents have no wish to leave either the dwelling or the estate) it seemed advisable to carry out further analysis to see if light could be cast on two key questions :

a) how far can responsibility for what has gone wrong on the estate be divided between architectural, management, technical and social factors?

b) what is the appropriate architectural action to be taken on the estate, especially with regard to the problems of layout, access and isolation ?

This analysis is in two stages : first, given that positive and negative attitudes were found to very different degrees in different parts of the estate, analysis was made of the inter-relationships of attitudes and experiences of groups of residents according to their location, both to

see if any systematic relation to the layout could be found, and also to see how far statistical analysis on this basis could begin to disentangle lines of influence from architectural, management, technical and social factors to attitudes to the estate. This analysis gives rise to a number of findings which should not be regarded as conclusions, but as suggestive hypotheses which should be subjected to a more searching analysis on the basis of the original questionnaire data.

The second stage was to carry out a spatial analysis of the estate in its urban context using the 'space syntax' method, coupled to an observational study of how the layout is currently used for e.g. movement, children's play etc, and an analysis of the spatial distribution of crime and the fear of crime on the estate. The aim of this analysis was to try to be more precise about the senses in which the spatial layout of the estate as it now exists is problematic.

10 - 'Location group' analysis shows that a whole group of residents' attitudes - liking the estate or not, being satisfied with the dwelling or not, liking the appearance and layout of the dwelling or not, and so on - are correlated with each other, and also with more practical dissatisfactions with the dwelling, such as perceived overcrowding and, to a lesser extent, with soundproofing. There is also a spatial pattern to this complex of attitudes : dissatisfaction peaks (as the Hunt Thompson report notes) in the central locations of the estate on a west-east axis, and falls towards the edges. This also correlates with the spatial factor of 'depth' in the estate (see below).

11 - Analysis of this pattern to try to disentangle cause and effect suggests that allocation policies are the key. The estate was built and occupied in two phases the first to the west the second to the east. As a result, location on the west-east axis correlates with the average length of time residents in the different locations have spent on the estate, with the longest standing residents in the west and the most recent in the east. Analysis shows that the number of people per bedroom increases quite consistently along the west-east axis, and therefore with time, until the easternmost blocks of bedsits and sheltered housing. However, in the eastern half of the estate, mean household size falls, so that although the number of people per bedroom continues to increase, it is in respect of a diminishing household size. In the central locations, therefore, there is a combination of high numbers of people per bedroom and large household size. It is also here that the highest concentrations of single parent families are found, which also affects the number of

people per bedroom. A figure calculated from all these factors correlates well with the subjective perception of overcrowding (having adequate bedrooms), and also with the distribution of negative and positive attitudes in a characteristic U-shape across the estate. This pattern could be explained by overcrowded households in the more westerly locations having already had time to move out, leaving concentrations of overcrowding in the centre. We think this is unlikely, but it could be checked against records. Whatever the outcome, however, it is clear that the special problems of the centre of the estate noted by the Hunt Thompson report (and leading to a proposals for a mass decant from these locations to a 'community architecture project' elsewhere) are the result of either allocation policies or a social process, not of a special disaffection with the architecture. On the contrary, the evidence suggests that residents' views of architecture can be strongly influenced by management and social factors.

12 - Not all attitudes to the estate form part of this complex. For example, the perception of the estate as friendly or unfriendly is associated, as one might expect, mainly with the proportions of households with children and the length of time of the estate. Because having children in a household plays a role both in overcrowding and in strengthening social networks, some locations find the estate friendly, but have many negative attitudes towards it.

13 - Being unhappy about rubbish and dirt on the estate also has an independent pattern, but one which is strongly correlated with the expressed desire to leave the estate, but not the dwelling (Figure 1). Expression of the desire to leave both dwelling and estate does, on the other hand, correlate with the main attitude complex, and in these expressions liking or disliking the appearance of the dwelling seems to be a strong factor both in wanting to leave (Figure 2) and wanting to stay (Figure 3). Appearance it seems is important, but positively as well as negatively.

But neither dirtiness nor the main attitude complex explain being on the transfer list. On the contrary, in the central locations where there is most dissatisfaction and most overcrowding, there are only average levels of residents on the transfer list. Analysis shows, however, that being on the transfer list correlated most strongly with not having chosen the dwelling (Figure 4), and having had negative feelings about the estate in the first place. In other words, taking active steps to leave the estate (as opposed to expressing the desire) seems to be associated with not having wanted to come to the estate in the first place rather

than with the experience of living on the estate.

14 - In general, then, location group analysis suggests that architectural and spatial factors are secondary to management and social factors in giving rise to negative attitudes and the active desire to leave the estate. But the analysis also shows that there are correlations between spatial factors and the pattern of fear and crime on the estate, which cannot be explained in terms of management and social factors. This therefore requires a more searching analysis.

15 - The spatial analysis of the estate layout shows that in spite of its initial appearance of being grid-like, it is strongly segregated from the surrounding area. Observational studies show that the segregated layout adversely influences the pattern of space use and movement, and is also implicated in the pattern of crime and fear of crime. More specifically :

- the average level of adult movement within the estate is abnormally low at .271 (.341 during school terms) persons per hundred metres or minute of time walked (or about one tenth of the average for non-shopping urban streets of 2.7) while the average presence of children is abnormally high at .83 (.53 during school terms) per hundred metres walked or minute of time, (or about four times the urban average of .25). These distributions are shown graphically in Figures 5 and 6. Figure 5 is a 'ten-minute map' of adult movement on the estate. Each black line represents a section of space observed (30 times), and each dot represents one person found moving through that section in ten minutes. Agar Grove at 2.5 adults per 100m/min (25 dots) is just below the urban average. The edges of the estate are the most populated, with a rapid fall-off moving into the interior of the estate. Note the virtual absence of movement on north-south lines in the interior of the estate to the east of St Pauls Crescent (the main entry to the estate), and the very low levels in the southern spaces generally. Figure 6 is a similar map for the use of space by children. Concentrations of children are found in many spaces which are particularly poorly used by adults, especially on the north south lines to the east of St Paul's Crescent. Elsewhere, concentrations of children far outnumber adults. The effect of these distributions is the almost complete elimination of the natural surveillance of small numbers of children by larger numbers of moving adults that is normal in urban environments. This is the objective counterpart of the feeling that much space in the estate is either empty, or dominated by children.

- the low levels of adult movement within the estate can be shown to be a product of the estate layout and how it fails to relate its internal structure to the structure and movement patterns of the surrounding area : levels of movement fall off systematically and dramatically with the 'depth' of spaces from the streets outside the estate - the depth of a space being the number of changes of direction that have to be made to reach that space from any point in the streets outside the estate. This measure of depth correlates almost perfectly with a measure of the degree to which each space is 'integrated' into its urban surroundings. This means that only the edges of the estate have such 'integration', and that the interior of the estate lacks an effective 'integration core' relating it to the surrounding area.

- if the 'depth' of the spaces of location groups are calculated to redefine the western green strip as outside the estate, then it also seems implicated in the fear of crime. By this definition, the depth of spaces correlates with the proportion of residents in those locations feeling unsafe at night and experiencing anxiety about burglary. Re-calculating depth again from the edge of the built fabric of the estate suggests there may also be a similar relationship with the actual experience of burglary and mugging (though other factors are also involved). More worryingly, there is a significant correlation between the proportion of residents who have experienced mugging and the numbers of children using the open space of the locations in which they live.

- These findings, and a more detailed analysis of the layout, suggest that the main layout problem of the estate is that it lacks a clear internal structure related to the entrances to the estate and the lines of movement in the surrounding area, and that this is exacerbated by sharp changes of level within the estate, often at crucial points, which interfere with route continuity. The estate layout is an object lesson in the design of layouts which aim to integrate with their surroundings, and go for urban safety by natural movement (as opposed to those which are intentionally cut off). Good levels of natural movement means route continuity within the estate and in relation to the surrounding area. Creating links is not enough. Without internal and external route continuity, links may create access without use which research increasingly suggests are undesirable.

A historical review of the evolution of the estate design suggests that these problems arose less from the initial design conception than from a

series of compromises on that conception, especially in relating the second phase of the development to the first phase and to the surrounding area. The original design idea for the whole estate (see main report for illustrations) was to overcome the potential isolation of the site by a series of strong connections to the north, east and west, clearly related to the internal layout, with an emphasis on bringing natural movement to the southern parts of the site. The elimination of important connections, and the failure to modify the design, particularly of Phase 2, when these connections were eliminated may have contributed much to the problems of the present layout.

What should therefore be done ?

It is common ground that considerable effort needs to be made to solve practical problems with dwellings, to improve the repairs and maintenance service, and solve the problems of tidiness and rubbish removal. The question is : What more needs to be done ? The Hunt Thompson Feasibility Study proposes a series of architectural changes aimed at radically altering the visual appearance and spatial layout of the estate (Figure 7). The estate layout is to be restructured by reorienting houses and changing their internal layout; making gardens back to back to improve security; altering open spaces to make access easier and improve parking; eliminating minor routes to increase pedestrian density on other routes in order to overcome the sense of isolation. The visual appearance of parts of the estate is also to be changed, including the introduction of pitched roofs to make it less modernistic and to break up the 'claustrophobic' and 'prison-like' feeling'.

It is not clear how these proposals follow from the social survey data, nor how they represent a response to its findings. On one matter where the social survey gives a quite specific result - that 58% of residents would like to see a continuous roadway through the estate (Quantitative Report, p.128) - the proposals offer no response. In response to the 87% who thought improved access to the estate very important, the proposals seem to offer only a limited response, emphasising rubbish disposal, rather than improving access throughout the estate. One suspects that the proposals may owe more to current conventional wisdom than to an analysis of the problems specific to the Maiden Lane estate.

It follows from our analysis of the social survey findings and the estate layout that any architectural changes to the estate should be aimed in the first instance at problems of the overall layout. A stronger internal

structure should be created, minimising difficult level changes, and with better relations to the surroundings. Since the estate's surroundings will soon include the new Kings Cross development, it is vital that any changes to the layout of the estate should take full account of the precise form of that development. It will not be enough to 'create links'. Links must have route continuity both ways.

Since the masterplan for Kings Cross is not yet finalised, it is not possible to offer fully worked out proposals for how the estate layout might be changed. But it is possible to outline in principle what ought to happen, and therefore what links to Kings Cross ought to exist, and how they should be exploited within Maiden Lane. Given route continuity with Kings Cross, we believe that it will not be as difficult to achieve a significantly improved layout in Maiden Lane as might be thought. The layout is far from irremediable, and could be made to work better with a series of carefully focused changes, aimed at improving the way the layout functions in relation to its surroundings.

First, we must consider the possible links to Kings Cross. The most obvious links would be two : a link from the south-west corner of the estate into the north-west corner of the Kings Cross site (this link is already in the King's Cross plan, and plays an important role in the layout of the northern part of the site); and a second link farther east, either in the area of Broadfield Lane linking down to a re-opened Maiden Lane station, and from there into the site; or a similar link leading to the southern end of Maiden Lane to the east of Beamish Gate.

Whichever eastern link is chosen, the existence of two southern links makes possible - and indeed requires - returning to the original Benson & Forsyth conception of bringing natural movement into the southern parts of the estate - though not in the form they originally hoped of through movement across the southern part of the site, but of movement from the two southern entry points laterally across the site and into St Pauls' Crescent. The effect of this would be to convert the main entry into the site (current adult movement rate : 1.6 pp100m/m), which is effectively a dead end at present, into a broadly splayed inverted Y with two important through-connections.

This structure will, however, only be viable if the links from St Paul's Crescent to the southern entry points are direct, easily intelligible and without sharp changes of level. In principle, the spaces are generous enough to permit this, but there are quite difficult levels problems to be solved which would require special study. If the estate is to be linked to

Kings Cross, however, it will be vital to solve the problem of easy lateral movement in the southern areas.

Given this rather fundamental change to the layout, a number of associated remodelling exercises should be undertaken at specific points of the layout with a view to improving its overall structure. The most important of these is in St Pauls Crescent itself. The section of St Pauls Crescent between the entrance to the estate and the westerly turn short of the district heating boiler is divided into an upper pedestrian level and a lower vehicle level. The upper level is only accessible from the lower level by a ramp at the northern end and narrow staircases hidden from view. In effect, there is a wall as well as a level change splitting the space into two. This space is, however, a key potential meeting of five important routes from east, west, north and south. The powerful barrier resulting from the wall and level change mean that this part of St Paul's Crescent provides neither a focal space nor route continuity. On the contrary, it breaks routes very powerfully.

A great deal would be gained if this two level space were remodelled to operate as far as possible as a single space. One way might be to remove the retaining wall and replace it with a continuous arrangement of steps and ramps which emphasises the continuity of the space across the two levels. The remodelled space would be both a focus of routes within the estate and an important entry space to the estate. As such, it would provide a far more powerful focal space than the estate currently has.

Three significant improvements should then be made to the routes entering this focus from the east. First, the tortuous access from York Way to the Agar Grove section of Maiden Lane should be opened up (the planting has in any case become a gathering point for litter and garbage). Second, the central line which appears in plan to link York Way to Pauls Crescent is at present interrupted by a sudden change of level at Maiden Lane, negotiable only by a small spiral staircase. This should be remodelled to make it a smooth and continuous route. Third, the line running west-east between these two lines, which appears to link St Pauls' Crescent to the small square with the children playground in the north east part of the estate, but which in fact is also broken by a level change and a spiral staircase at Maiden Lane, should be similarly remodelled to create a continuous and easy route.

These changes will have the effect of creating an internal structure to the estate that is related to the natural movement patterns in the surrounding area, as they will be when the Kings Cross site is developed.

They will in effect create a core of natural movement both east-west and north-south, and covering all areas of the estate. Places like Linkwood Walk and Rosebank Walk will become more like quiet streets running between busier streets, rather than segregated spaces going from nowhere to nowhere. These changes could be made without massive expenditure and without altering the architectural character of the layout as it stands.

Reconsidering the Hunt Thompson layout proposals in the light of these arguments, we fear that because they are not aimed at the overall structural problem of the layout, its isolation from the surrounding area, they will not help to overcome its social problems. They leave the overall structure of the layout more or less as it is, minus a few alleys. Back-to-backing the houses may be desirable for other reasons, but it will not in itself solve the problems of the layout. On the contrary, carried out in the way proposed, it may worsen things by creating a more solid area of segregation in the south part of the east side of the estate and by eliminating the potentially strong link directly from York Way to the heart of the estate.

In short, our belief is that that the architectural solutions proposed in the Hunt Thompson report do not do justice either to the excellent body of social survey data in the report, or to the specific problems of the architecture and layout of the estate. They seem to owe more to current architectural fashion than to architectural analysis. The lesson is once again, we suspect, that generalised solutions cannot easily be applied to the solution of specific problems. Each case must be studied architecturally in its own right.

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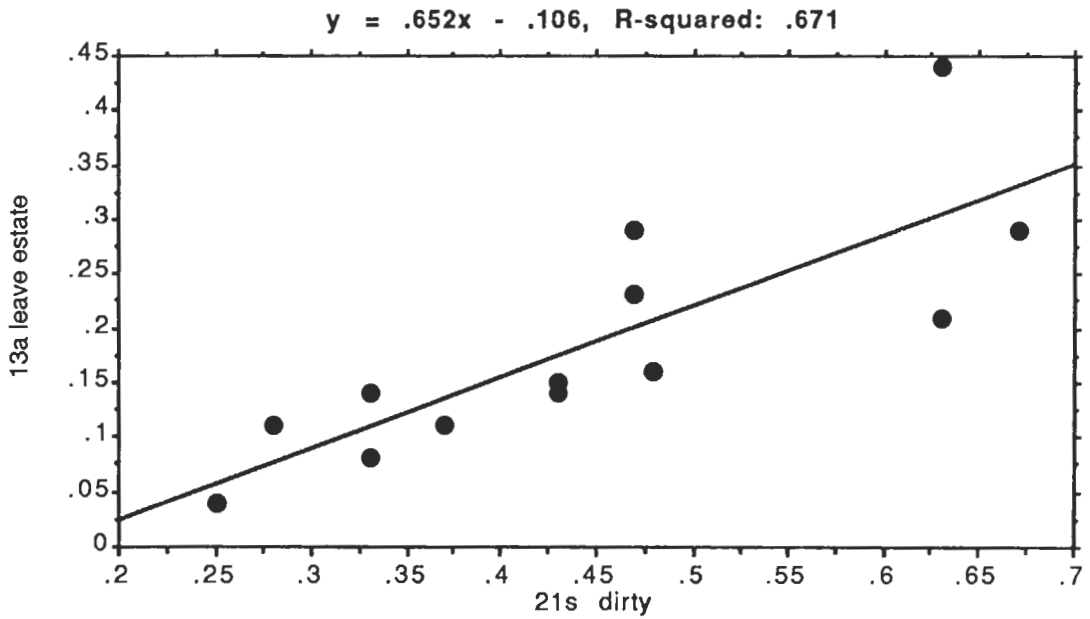


fig 1: the correlation between finding the estate dirty and the wish to leave the estate but not the dwelling; by location groups across the estate. $r = .819$ $p = .0006$

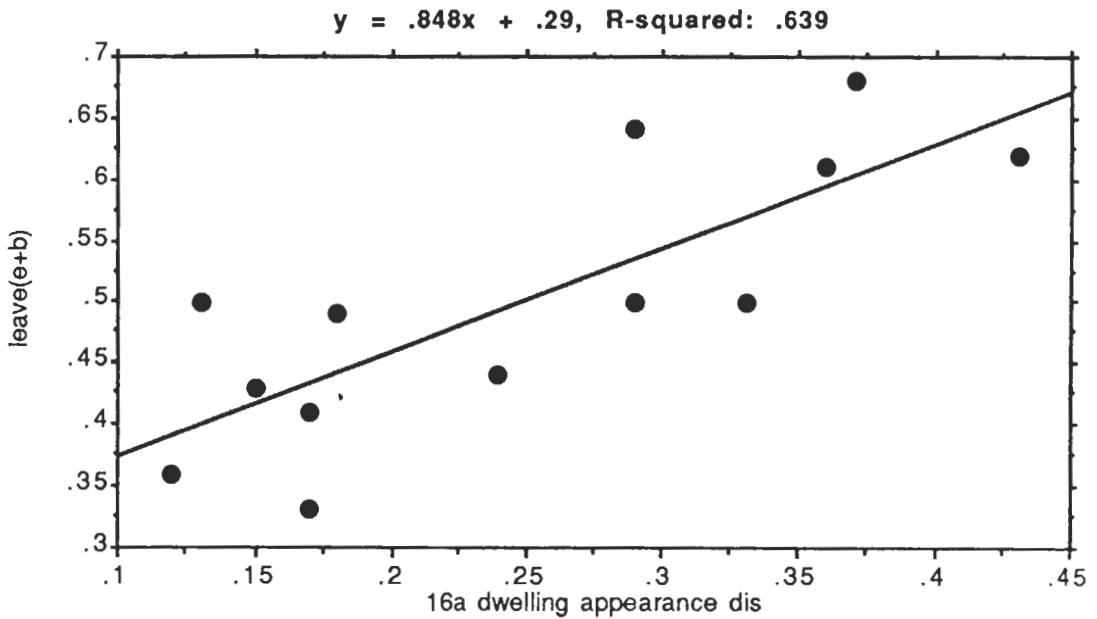


fig 2: the correlation between the wish to leave the estate, or both the estate and the dwelling, and the proportion of respondents dissatisfied with the dwelling appearance; by location groups across the estate. $r = .799$ $p = .001$

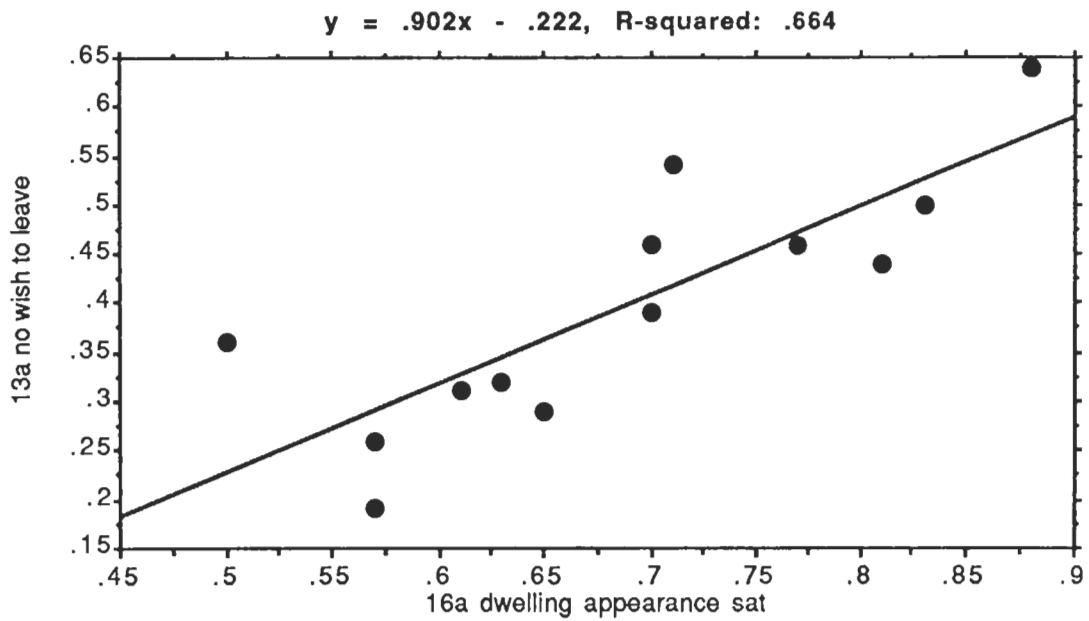


fig 3: the correlation between having no wish to leave and the proportion of respondents satisfied with the dwelling appearance; by location groups across the estate. $r = .815$ $p = .0007$

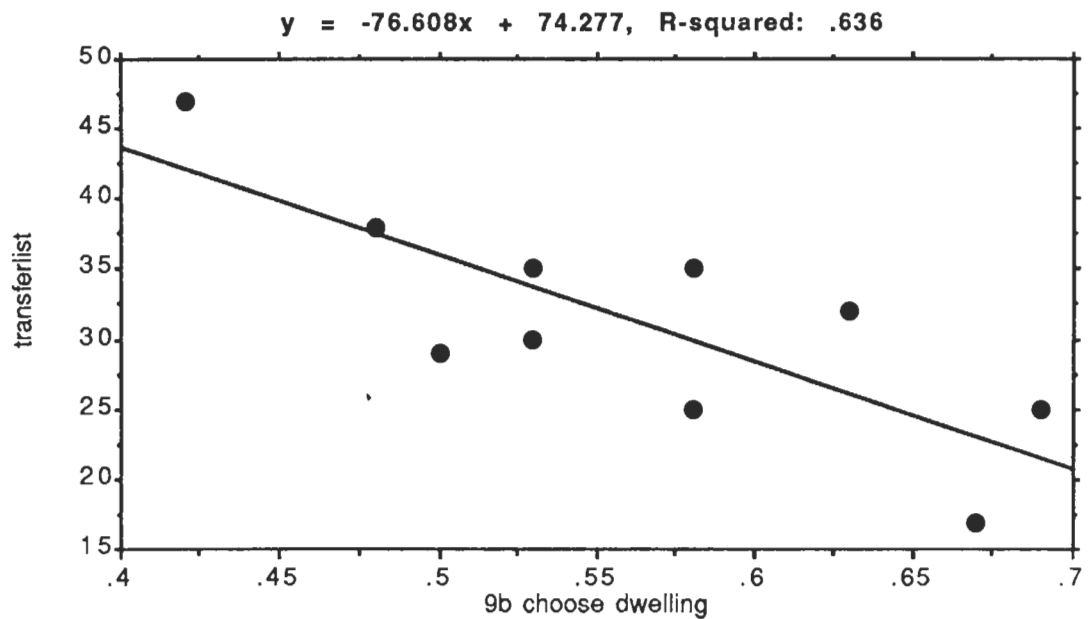


fig 4: the correlation between the proportion of those on the transfer list and those who chose the dwelling in the first place; by location groups with children across the estate. $r = .797$ $p = .0057$



fig 5: map showing the observation route on the estate with one black dot representing one adult per ten minutes of walking time. This shows graphically what can be called the "encounter rate" in different spaces within the estate.

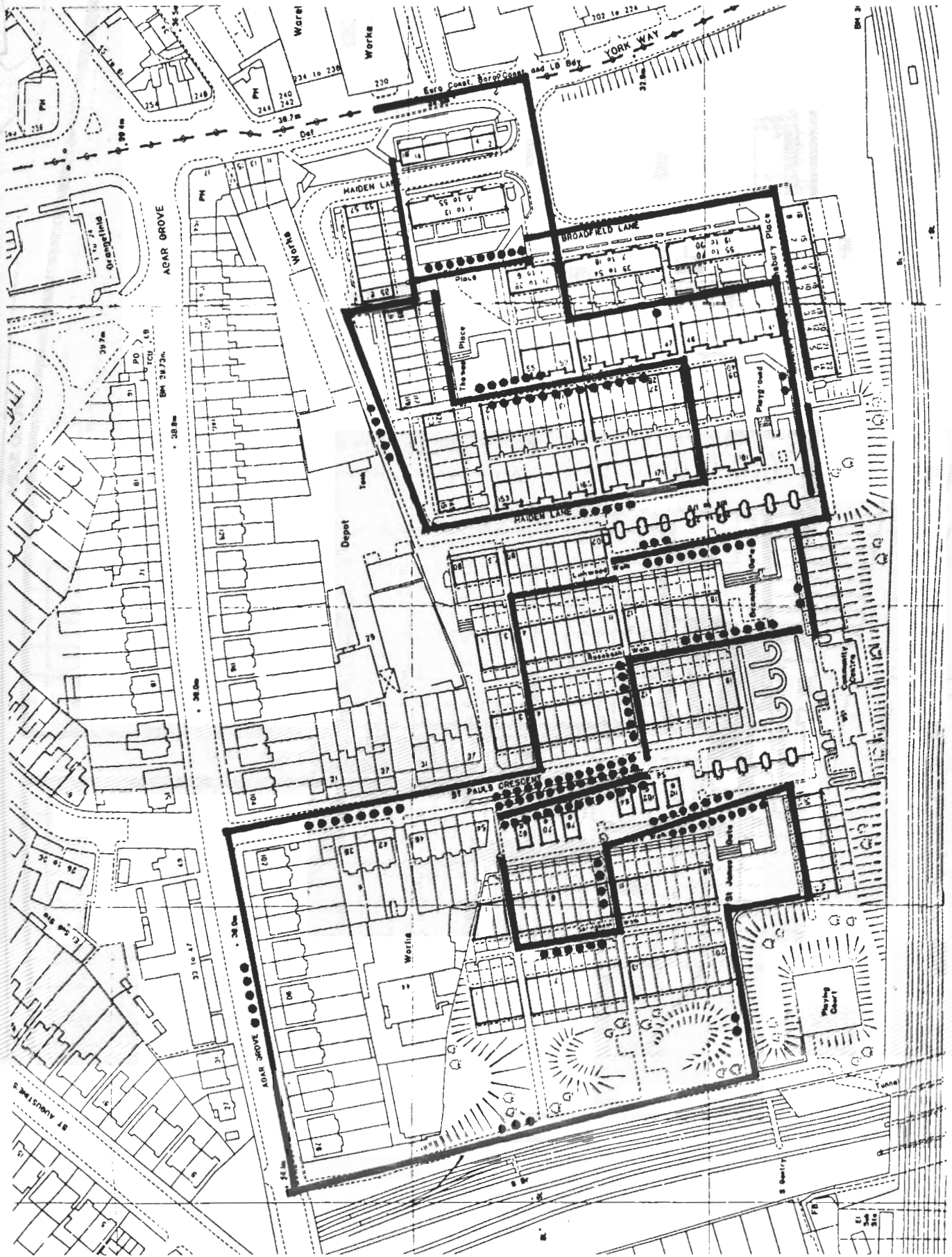
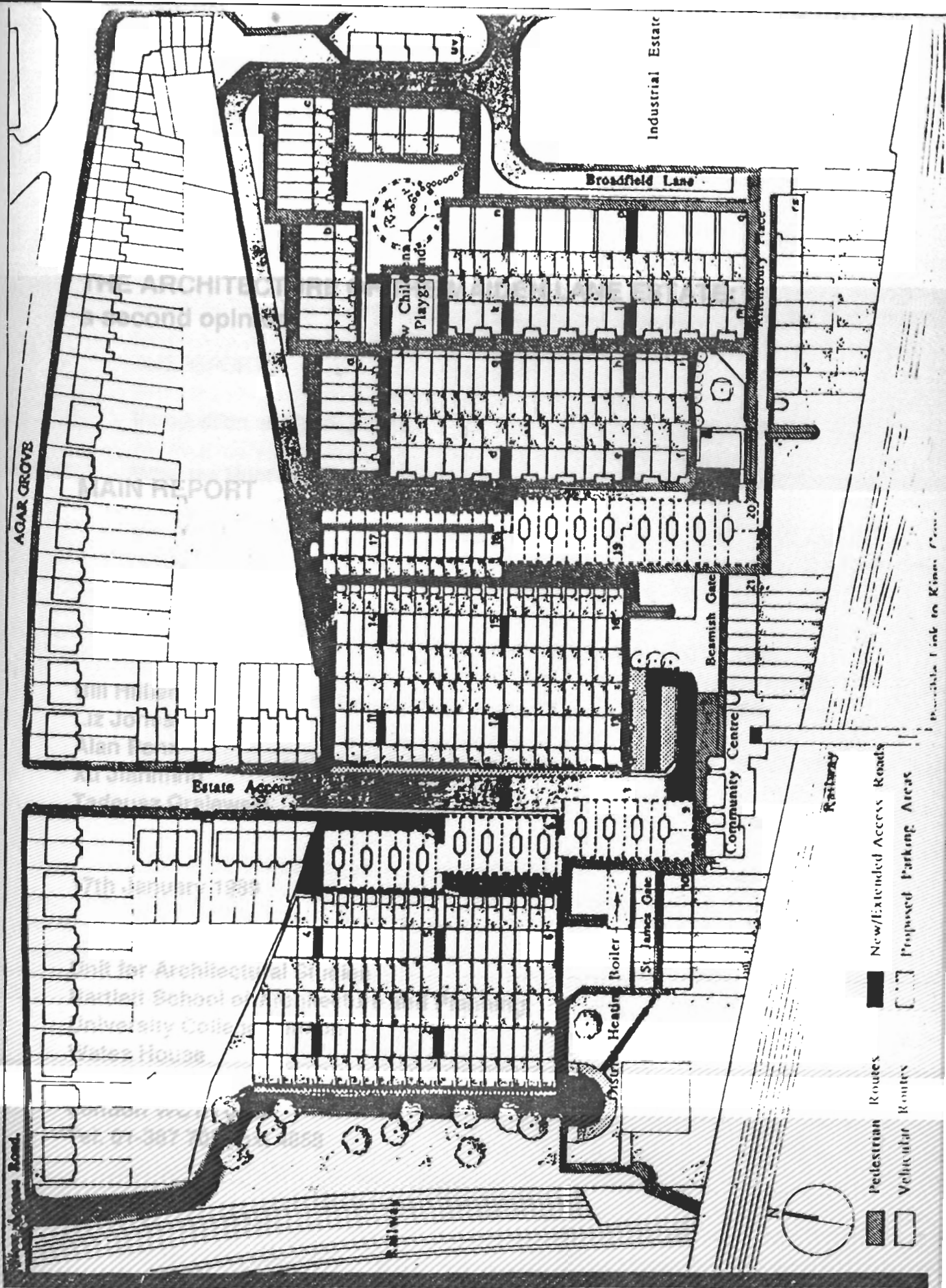


fig 6: map showing the "encounter rate" for children on the estate. One black dot represents one child per ten minutes of walking time.



Proposed Estate Circulation

fig 7: plan by Hunt Thompson Associates included in their Feasibility Study showing proposed amendments to the estate circulation.

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MAIN REPORT

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by Fourné Associates

At the time of its completion in 1983 the estate was acclaimed in the architectural press as an outstanding example of how modern architecture could provide the very best in public sector housing. This appreciation was not confined to architects and critics. As the Hunt Thompson report shows, many residents also talked of the estate and its architecture in glowing terms. The low rise buildings, the linear, 'white architecture' image, the scaled down spaces, the 'urban' layout

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This report is a 'second opinion' on the Maiden Lane estate, following the social survey report, feasibility study and proposals for refurbishment produced by Hunt Thompson Associates in January 1988. It has been researched and written following a request by Gordon Benson and Alan Forsyth, formerly employed by the London Borough of Camden as the project architects for Phase 1 of the scheme, now Benson & Forsyth Architects, for a further view following the Hunt Thompson report. The study draws on the Hunt Thompson social survey, on previous studies of the estate carried out by this Unit, and on some historical material supplied by Benson and Forsyth. We are indebted to Hunt Thompson for making their material freely available to us, and for supporting the idea of further research on the estate although they felt unable to contribute to it financially. Financial support was provided partly by Benson and Forsyth Architects and partly by the Unit for Architectural Studies.

Introduction and background

The Maiden Lane estate is a public housing development of 479 dwellings with associated shops and a community centre, built by the London Borough of Camden between 1976 and 1983. It is situated between the residential area of Agar Grove and Camden Square to the north and the light industry of York Way to the east, with railway lines to the west and south. Directly to the south is the Kings Cross railways lands site, shortly to be developed by British Rail in association with the London Regeneration Consortium to a masterplan by Foster Associates.

At the time of its completion in 1983 the estate was acclaimed in the architectural press as an outstanding example of how modern architecture could provide the very best in public sector housing. This appreciation was not confined to architects and critics. As the Hunt Thompson report shows, many residents also talked of the estate and its architecture in glowing terms. The low rise buildings, the linear, 'white architecture' image, the scaled down spaces, the 'urban' layout

and the internal shopping and community facilities all seemed to add up to a new, human scale vision of modernism that was as attractive to incoming residents as it was to architectural critics.

Since then the deterioration of the estate seems to have been precipitate. There are some of the signs of the 'social malaise' that is thought to characterise the 'problem estate', in the form of litter and abandoned cars, though it must be added that other signs, such as graffiti and vandalism, seem much less in evidence. The sense of malaise is, however, strongly reinforced by technical and maintenance problems, such as the failure of the brick paving sub-base, and what appears to be a breakdown in rubbish removal in parts of the estate.

In March 1987, the London Borough of Camden commissioned a study by Hunt Thompson Associates to look at all aspects of the Maiden Lane estate, and propose remedial action. In January 1988, Hunt Thompson submitted a report to Camden in which architecture was argued to be a key factor in the breakdown of the estate, and proposing major design changes, supported by changes in the management and social composition of the estate, as a means to reversing its apparent decline.

In May '88, following articles in the press in which the architects of the scheme were explicitly criticised (including one by Gavin Stamp in the Independent in which the estate was called 'a model of architectural arrogance and incompetence' and the Hunt Thompson report 'a model of the serious community architecture approach') Gordon Benson and Alan Forsyth who had been employed by the London Borough of Camden as project architects for Phase One of the estate before setting up a private practice, (Benson & Forsyth) asked the Unit for Architectural Studies for a second opinion on the Hunt Thompson report and the design changes it proposed. How far, they asked, was it justifiable to blame architecture for what had gone wrong? Had architectural factors been adequately disentangled from social and management factors in the Hunt Thompson analysis? Would the design changes proposed really bring about the promised improvements to the estate? Could the Unit's methods for analysing architectural and urban layouts ("space syntax") be used to throw further light on these matters?

The Unit proposed that since some new research would be required to provide the basis for a second opinion then academic impartiality would be best preserved if the Unit's study were jointly funded by Benson & Forsyth and Hunt Thompson. In the event, Hunt Thompson, although sympathetic to the study, felt unable to give financial support.

The study has therefore been funded half by Benson & Forsyth and half by the Unit itself.

It should be made clear from the outset that this report is concerned only with the architectural issues raised in the Hunt Thompson report. It does not aim to offer comment on the initiatives proposed by Hunt Thompson on management and social composition, nor on technical problems with the dwellings, except insofar as these are directly relevant to understanding residents' attitudes to the design.

It should also be made clear that, having carefully studied both the estate and the Hunt Thompson material, this report is not written in a spirit of criticism of either party. If Benson and Forsyth were influenced in their design by contemporary theoretical ideas which seemed to offer an answer to what had gone wrong with public sector housing, then the same must be said of Hunt Thompson in proposing remedies now. Benson and Forsyth's design was not idiosyncratic. It was the culmination of a line of thought which at the time offered great promise and seemed to have achieved success. Hunt Thompson's architectural solutions similarly reflect the current state of theory, and involve the same risk in stepping into unknown territory. We believe that both Benson and Forsyth in their design and Hunt Thompson in their report have tried to use state-of-the-art knowledge in attempting to solve the intractable problems of public sector housing. Both the estate and its criticism have helped to set the terms of debate in their time. What must be done now is to ensure that both sets of ideas are subject to an evaluation as rigorous and objective as possible.

The aim of this report is to try to move outside the changing context of currently acceptable ideas and look as carefully as possible at the architectural design of Maiden Lane, and especially at the spatial design, to try to determine how far a relationship can be established between the physical and spatial form of the estate and the social survey evidence of what has gone wrong.

The report begins with a review of the Hunt Thompson material, with special attention to comparing the evidence in the data volumes to the conclusions drawn in the Feasibility Study. We give a short description of the estate layout, and then analyse the estate and its pattern of space use and movement using the 'space syntax' method to try to pinpoint layout problems - for example, 'dead areas' on the estate, and how the estate connects to its surroundings. This is followed by a brief history of the design ideas behind the estate, and how they were

changed in realisation. We then look at the relationships between the estate layout and the spatial distribution of crime and the fear of crime. derived from the social survey data.

The spatial analysis is then used as the basis for a re-analysis of the social survey data on attitudes, to try to disentangle cause and effect among the various architectural, management and social factors contributing to the malaise of the estate. Finally the report looks at the Hunt Thompson design proposals, draws design conclusions from the analysis, and proposes that the best way ahead would be to introduce a small number of critical changes to the layout which take full account of the potential offered by the Kings Cross development to the south, and offer the prospect of realising the original design intention of integrating the estate into its surrounding urban fabric.

A brief summary of the main findings and conclusions of this report are contained in the accompanying Summary Report.

What the Hunt Thompson report says

The Hunt Thompson report comprises four volumes of evidence, summarised and synthesised in a Feasibility Study which draws general conclusions and makes proposals. Of the four volumes of evidence, two are made up of tabulated data from a social survey of 380 residents, one is a summary quantitative report, and one a qualitative report detailing in-depth interviews with 23 tenants. The Feasibility Study is the lead document, with the other four volumes in the role of supporting evidence.

The report proposes radical changes in the management, maintenance and social composition of the estate. These include a more participatory and localised system of management, improvements in arrangements for refuse removal, estate cleaning and repairs, and the voluntary transfer of overcrowded families elsewhere, and their replacement either by new tenants with smaller families or by owner occupiers. Some of these proposals may be controversial, particularly those relating to changes in social composition, but they are not our prime concern here. The need for improvement in the management, maintenance and repair programmes of the estate, is agreed by all parties.

The report also proposes a series of architectural changes intended to alter the visual appearance and spatial layout of the estate. The estate

layout is to be restructured by reorienting houses and changing their internal layout; making gardens back to back to improve security; altering open spaces to make access easier and improve parking; and eliminating minor routes in the hope of increasing pedestrian movement on other routes and alleviate the sense of isolation. The visual appearance of parts of the estate is also to be changed, including the introduction of pitched roofs, to make it less modernistic and to break up what is referred to as the 'claustrophobic' and 'prison-like' feeling'. It is these changes to the architecture of the estate, and the reasoning behind them, that are the subject of this report.

The Hunt Thompson report (as summarised in the Feasibility Study) is unequivocal in its reasons for these architectural changes. *'The breakdown at Maiden Lane is now virtually complete. The community is at odds with itself, with the buildings it inhabits, with the local authority that runs it, and ultimately with the wider community that surrounds it, from whom it is physically segregated and by whom it is socially stigmatised. Conditions on the estate are seen by the police as being a time bomb for the future'* (Feasibility Study: 1.7).

Statistics from the social survey are adduced in support of this conclusion: *'53% express the feeling of living on the estate in negative emotional terms : "depressed, closed in, claustrophobic, imprisoned" ; 71% give descriptions of the estate in negative terms, often with a menacing element : "prison, concentration camp, forbidden city, criminal dreamland, battery farm, mental institution in southern Spain " ; 80% of tenants expressed positive feelings on first moving in, 50% now want to leave; 42% of tenants have no friends on the estate, 23 % do not exchange any greeting; 60% are unhappy to bring up their families on the estate'* and so on.

This is then followed by an 'Analysis of the estate', consisting of three plans and summaries of the original schedule of accommodation and design objectives (drawn from the 'Architectural Review' of April 1983), followed by 26 pages of single page vignettes, in which pictures illustrating the problems of the estate ('isolated location', 'design and social stress', and so on) are set above juxtaposed quotations from architectural critics and resident interviews. The technique is powerful and the inference obvious. The contrast between architectural complacency and human reality is stark. This is then supported by a review of the main sources of tenant dissatisfaction as shown by the social survey.

The report then draws general conclusions (Feasibility Study

3.3): *'Although many tenants clearly experience other forms of personal stress, there is overwhelming evidence to suggest that the design of the physical environment is a major factor in contributing to the stressful nature of the estate.....many technical and stress related problems can be directly attributed to the layout of the estate.....the chosen architectural language is so powerful, both externally and internally, that people have been unable to personalise their environments...there is a certain deprivation of the soul at Maiden Lane...the tenants...feel trapped by the barren and repetitive imagery that has been imposed on them...the Modern Movement, through its theories and imagery, has rarely proved itself capable of providing responsive and flexible backgrounds for human life'.*

The architectural case against Maiden Lane thus stresses two key aspects of architecture : visual appearance and spatial layout. Both, it is argued, have had adverse effects on residents, and must be changed to comply with more recent thinking. Is the case made ? And if so, are the changes proposed likely to improve the situation ?

Visual appearance

We should begin by looking as carefully as we can at the evidence that the visual appearance of the estate is causing distress to residents. There are two questions in the social survey that refer directly to appearance : one which asks residents how satisfied they are with the 'general appearance' of the dwelling (q.16a), and another which asks the same for the estate (q.25a). There are also questions about the 'look' (q.21) and 'feel' (q.24) of the estate, which should be taken into account.

On satisfaction with the 'general appearance' of the dwelling, the tabulated data summarising the responses to the questionnaire (Vol 2b p.48) show that 69% of residents are in fact satisfied with the appearance of their dwelling, with 24% dissatisfied. Appearance turns out to be the second strongest satisfaction score for all the questions about the dwelling, with amount of daylight higher (87% satisfied), and dwelling layout (68% satisfied) only slightly lower, followed by generally high satisfaction scores on the design of individual rooms. Strong scores on dissatisfaction with the dwelling are for sound-proofing between dwellings (63% dissatisfied) and worries over security against burglary (63% dissatisfied). It is clear that at the level of the dwelling, appearance is not a cause of concern.

When we turn to the 'general appearance' of the estate, we find a

different story. Only 31% are satisfied, with 59% dissatisfied or very dissatisfied. We also find, however, that 80% are dissatisfied or very dissatisfied with the 'cleanliness and tidiness' of the estate, with only 17% satisfied. This is problematical, since it is not clear how far satisfaction with the 'general appearance' of the estate includes an element of 'cleanliness and tidiness'.

Both 'general appearance' questions were 'prompted' questions in that the interviewer specifies what the respondent is to talk about. We must therefore try to clarify this by looking at the 'unprompted' questions, where the interviewer specifies a general topic ('what the estate looks like as a whole', 'what is the estate like to live in') and the respondent decides what s/he should talk about. Here we encounter a serious difficulty in the data and the way it is presented. In the Feasibility Study 'headlines', it is said that *'71% give descriptions of the estate in negative terms, often with a menacing element : "prison, concentration camp, forbidden city, criminal dreamland, battery farm, mental institution in southern Spain"'*. In the Quantitative Report, however, the same data is presented rather differently : *'71% give descriptions of the estate in negative terms, in which there is a major focus on dislike of the rubbish and dirt (42%). However, a third of descriptions contain visual references in which there is a menacing element apparent in comparisons to.....'*

Now it is clear that the 71% figure is taken from p.73 of Vol 2b under the heading 'any unfavourable comment', summarising the 'spontaneous descriptions' of the estate produced in response to the question on 'what the estate looks like as a whole'. Immediately below is the comparable figure for 'positive comments' : 30%. Examination of the 'positive points' that make up this figure shows clearly that most are explicitly about the visual and spatial properties of the estate. Only 2% comment favourably on the estate being 'clean, tidy, fresh'.

Examination of the 'negative points' to see how many refer clearly to visual and spatial properties rather than 'rubbish and dirt' lead us to about the same figure as the report suggests : about one third.

What the data shows, therefore, is that the negative and positive comments which clearly relate to the visual and spatial properties of the architecture are more or less in balance, with as many favourable as unfavourable. This is confirmed on p.99 of the Quantitative Report. The impression given by the Feasibility Study headline, that there is a widespread disaffection with the visual and spatial properties of the architecture, is thus clearly misleading. Such views exist, but they are

a minority view - though a strongly expressed one. It follows that the antipathy to the visual and spatial properties of the architecture cannot therefore be a prime cause of the estate's malaise.

Other evidence supports this conclusion. First, it is notable that in response to the open-ended question in the social survey designed to elicit 'spontaneous things disliked about living on the estate' (Social Survey, Vol 2b pp 79 - 90), there are hardly any references to the appearance of the estate, but large numbers referring to practical problems arising from the layout and from the failure to maintain it in good order. Second, as we have already seen, 69% of residents are satisfied with the appearance of their dwelling. It would be strange indeed if significant numbers of residents approved of an architectural style at the level of the dwelling, but disapproved of it at the level of the estate. Finally, the overwhelmingly positive (80%) initial response of tenants to Maiden Lane is reported in comments many of which have a strong visual/spatial component : 'Palace, paradise, fantastic..... (down to).....modern, clean, bright (Vol 2b p 66)', which are as striking as the 'Alcatraz/Colditz' comments are today. It seems unlikely that so many residents have changed their aesthetic views during their time on the estate **. It is far more probable that their visual/spatial appraisal has become overlaid by other factors, the strongest of which would seem to be the sense that the estate is dirty.

We can put this proposition to further test by 'correlating' complaints about dirtiness with a key attitude variable : the expression of the wish to leave the estate (but not the dwelling - see p.71, Quantitative Report). We do this by dividing the residents of the estate into their 'location groups' - that is, as all the respondents living in Springbank Walk, all those living in St James Gate, and so on - and exploring how far different attitudes and experiences found in these groups vary with

** Similarly, the claim that '53% (of residents) express the feeling of living on the estate in negative emotional terms "*depressed, closed in, claustrophobic, imprisoned*' gives the impression that all these negative feelings are directly imputable to the architecture. Reference to p.103 of the Social Survey Quantitative Report shows that only a minority of these expressions refer directly to architecture. Others describe states of mind (being tense, feeling isolated, feeling frustrated) which *may* indeed be caused by the architecture, but are equally likely to be the outcome of the severe social conditions experienced by many on the estate. Indeed, the Quantitative Report (p.104) notes that negative feelings are higher for households with children, while for couples without children there is a majority of positive comment on the feel of the estate. It is clear that social factors are implicated in these negative feelings, and that no grounds have been established for regarding architecture as their main source. On this aspect of the data one might also criticise the Quantitative Report (p.105) for devoting only a single sentence to the 42% of those expressing positive feelings of varying degrees of 'happiness, contentment, (and) satisfaction'.

differences in location. If we ask, for example, whether the proportions of residents in each location group wishing to leave the estate (but not the dwelling) is 'correlated' with any other variable, then we find that by far the strongest is finding the estate 'dirty'. Figure 1 is a 'scattergram' showing this relation in a visual way. Each circle represents a location group. The higher the circle for that group is on the vertical axis, then the higher the proportion of that group wishing to leave the estate; the farther to the right on the horizontal axis, then the higher the proportion complaining that the estate is dirty. The correlation (visible in the degree to which the circles approximate a line rising from bottom left to top right) is very high at $r = .819$, probability (the likelihood of this occurring by chance) $.0006$ i.e. 'very highly significant'.

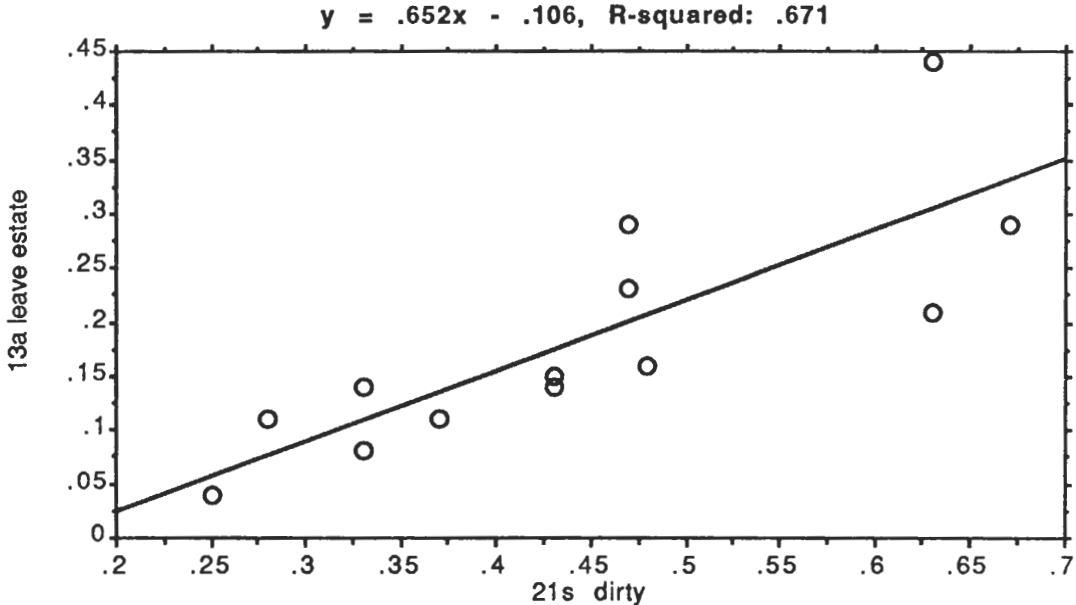


Figure 1. The correlation between finding the estate dirty and the wish to leave the estate but not the dwelling, by location groups across the estate.
 $r = .819$ $p = .0006$

If we do the same thing with the negative 'look comments' (i.e. complaining that the estate looks like Alcatraz, or some other negative image) we find no such correlation. Correlations are, however, found with other factors, especially having children and feeling unsafe, as shown in the 'correlation matrix' shown in Figure 2 (where high values between 0 and 1, whether positive or negative, indicate a strong relationship). But when we test out the inter-relationships of these factors in determining the wish to leave the estate by the technique known as 'multiple regression' (which answers the question : what is the correlation between variables when the effects of other variables

are taken into account) we find that feeling the estate is dirty is the only powerful variable (see Figure 3). In particular, the response to the question about the 'general appearance' of the estate, which we suspected to be contaminated with finding the estate dirty, is shown to have no effect at all. The main reason for wanting to leave the estate (as opposed to the dwelling) is, it seems, finding the estate dirty.

Correlation Matrix for Variables: X₁ ... X₈

	13a leav...	21s dirty	10 est d...	5c Child...	11 unfri...	feelunsafe	14 home...	16a dwe...
13a leav...	1							
21s dirty	.819	1						
10 est di...	.257	.406	1					
5c Child/...	.542	.48	.704	1				
11 unfrie...	-.037	.085	.343	-.182	1			
feelunsafe	.655	.506	.569	.791	-.197	1		
14 home258	.266	.817	.726	.253	.609	1	
16a dwel...	.175	.365	.502	.22	.546	.39	.51	1

Figure 2 . Correlation matrix of wish to leave the estate but not the dwelling with other factors, having children, feeling unsafe etc.

Multiple Regression Y₁:13a leave estate 4 X variables

Beta Coefficient Table					
Parameter:	Value:	Std. Err.:	Std. Value:	t-Value:	Probability:
INTERCEPT	-.259				
5c Children	-.046	.091	-.164	.509	.6248
21s dirty	.489	.175	.615	2.792	.0235
feel unsafe	.365	.312	.347	1.17	.2756
est app dissat	.002	.003	.177	.579	.5782

Figure 3 . A multiple regression analysis setting the desire to leave the estate against having children; finding the estate dirty; feeling unsafe & disliking the estate appearance. A high t-value and a low probability picks out the main factor when the effects of the other factors are taken into account.

This finding is specific to the desire to leave the estate rather than the dwelling. When we come to look more closely at reasons for leaving or staying, and we take the the desire to leave the dwelling into account, the outcomes are different (see p.xx below) The feeling that the estate is dirty is also distinctive in another sense. Analysis by 'location groups' suggests that most expressions of dissatisfaction among residents are strongly inter-correlated. If you are unhappy about appearance, then you are likely to be unhappy about layout, about the

kitchen, and so on. Dirtiness is different. It does not correlate well with anything else. The reaction to dirt is, it seems, a very specific and well focussed reaction, not part of a general sense of dissatisfaction, and it seems to lead to a specific outcome : the desire to leave the estate.

But exonerating the visual appearance of the architecture as a general cause of the estate's malaise does not exonerate the design. There remains a very substantial body of negative comment both on technical aspects of dwellings, and on the spatial layout of the estate. Since the need for technical improvement is not in dispute, we shall now turn to the question of the layout. As the Hunt Thompson report notes, there is a very high reporting of difficulties in finding addresses, with poor access for service and emergency vehicles, with safety and arrangements for children's play, with the isolated location, and with levels of anxiety about crime. All these seem to refer to the spatial layout in a functional, rather than an aesthetic sense.

But it is also the case that there are differences in the level of reporting of problems from one location on the estate to another. The Hunt Thompson report does attempt to relate these differences to an analysis of the spatial layout of the estate and how it works. If changes are to be made to the layout, then such an analysis would seem to be of prime importance. The next section of this report will therefore look more carefully at the spatial layout of the estate and how it is used.

The layout of the estate

The plan of the estate is shown in Figure 4. At first sight it has the structure of an urban grid. But on the ground the lack of dominant lines of movement through the estate combine with the small scale, the frequent changes of level and direction, and the narrowness of some important routes to make it complex and hard to understand. Figure 5 shows the estate in its urban context by drawing in black all the public open space of the area. The reduction in scale and the increase in complexity in Maiden Lane are obvious.

Maiden Lane does make a number of connections to the surrounding area - three to York Way (the southernmost one a labyrinthine relic of the original idea of an east-west route across the site, passing behind the industrial units to link to York Way at one end, and over a footbridge to the the Camley St. industrial estate in the west) and two to Agar Grove,

one at St Paul's Crescent, and the other by the railway bridge further west on Agar Grove. But at the boundary of the estate there are few clues as to the internal layout, and certainly no indication of the possibility of through movement to other destinations.

Within the estate dwelling entrances are for the most part located on spaces that run north-south, and so are distanced from the main access lines of movement across the estate from east and west, an effect which is heightened by the tendency to conceal dwelling entrances from outside spaces. This strong segregation of dwelling entrances from pedestrian movement is presumably one of the unintentional by-products of changing the pattern of movement in and out of the estate from north-south (the connections to Agar Grove in the original design concept - see below) to a predominantly east-west orientation - though this may have been affected also by the common belief at that time that it was desirable to separate entrances from movement in the interests of privacy and security.

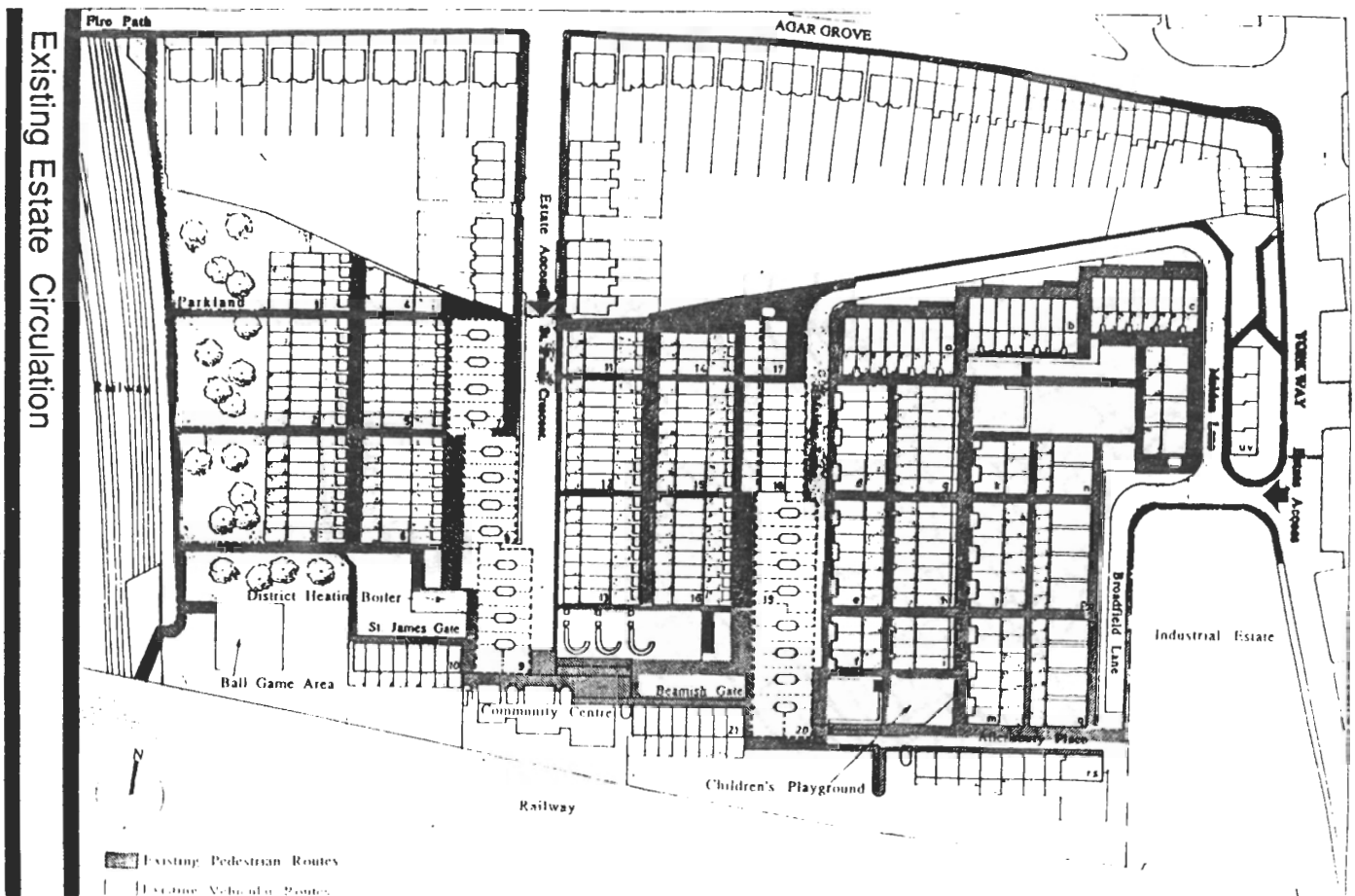


Figure 4. The plan of the estate taken from the Hunt Thompson Associates' Feasibility Study.



Figure 5. The open space structure of the estate in its urban context, with all open space open to pedestrian access shown in black.

Although it might appear, then, that Maiden Lane has a simple rectilinear structure, 'on the ground' a different story presents itself. The small scale of the design, compounded by level changes, means that most spaces are comparatively short and many potentially long links are broken up mid way. The level changes between phases one and two and the level change at St Paul's Crescent are particularly difficult.

They effectively cut links going east - west and pedestrians are forced to negotiate small narrow staircases, or to enter the covered car park. The only path which does get across most of the estate is actually a 'left over' space along the northern boundary with the new estate to the north (cut off, incidentally by a new, very high wall). The rear of the estate adjoining the railway, where through movement was originally intended to take place, is heavily broken up, with many short spaces and level changes involving ramps and staircases.

Spatial analysis of the estate layout, and how it works

The layout of the Maiden Lane estate and its pattern of movement and space use was recently studied by the Unit for Architectural Studies as part of an analysis of the urban context of the Kings Cross site for Foster Associates. That study noted a number of worrying facts : the degree of 'structural segregation' of the estate from the urban area as a whole was very high; the basic 'encounter rate' (measured as the average number of moving adults you can expect to pass while walking in the estate) was alarmingly low - about a tenth of the norm for London residential streets at .271 people per hundred metres/minute (i.e. on average you would pass another adult once every five minutes on the estate, or every half kilometre you walked) compared to the norm of 2.7 people per hundred metres/minute for ordinary residential streets; the rate of encounter of children was four times as high as that for adults at .83, (compared to the urban norm about .25 or one tenth of the normal adult rate); and there was a strong disjunction between adult movement and the places most frequented by children, creating a virtual absence of informal surveillance by adults of children.

These figures are the factual underpinning of the strong impression often found on housing estates, that spaces are either empty, or dominated by children. The Kings Cross study suggested that the very low level of adult encounter in comparison to its surroundings was in the main a product of the strong isolation of the estate from patterns of natural movement in the area and, as is often found; even a

relatively high housing density could not compensate for this.

As the Kings Cross study was carried out during the school Easter holiday, and the exceptional numbers of children were probably influenced by this, a further study was carried out by a doctoral student (Xu Jianming of the Bartlett) during the school term. This presented a slightly more optimistic picture. The mean encounter rate for moving adults was still very low at .341, but was closer to parity with the reduced rate for children at .53. Moreover, the degree to which adults and children used space to the same level was much better, and in particular adults were found to stop and talk in spaces used by children. This suggested a higher degree of natural surveillance of children by adults during school terms.

Both studies, however, found that the all important encounter rates for moving adults (the basis of natural movement and the informal security advantages it brings) fell dramatically from the edges to the heart of the estate. Figures 6 and 7 show this graphically. Figure 6 is a 'ten-minute map' of the 'adult encounter field' at Maiden Lane. The black lines show the routes walked by our observers, and each dot represents an average of one tenth of a moving adult per minute, or one adult every ten minutes. Thus Agar Grove has 25 dots, representing 2.5 moving adults per minute, or 25 adults in ten minutes, while Elmfriars Walk has .1 per minute or one per ten minutes. Black lines without dots mean that no one was encountered on these spaces in 30 'observation rounds', conducted throughout the day. It is clear that the numbers of dots fall away rapidly as one penetrates the depths of the estate, measured in terms of the numbers of changes of direction that must be made to reach the space from the outside.



Figure 6. Map showing the observation route on the estate, with one black dot representing one adult per ten minutes of walking time. This shows graphically what can be called the 'encounter rate' on the estate.

Figure 7 shows the same map for all children, whether static or moving. The pattern is not exactly the opposite of the adult pattern, but it does show how systematically concentrations of children occur in spaces that are poorly used by adults, breaking the urban principle of natural surveillance of small numbers of children by larger numbers of moving adults.

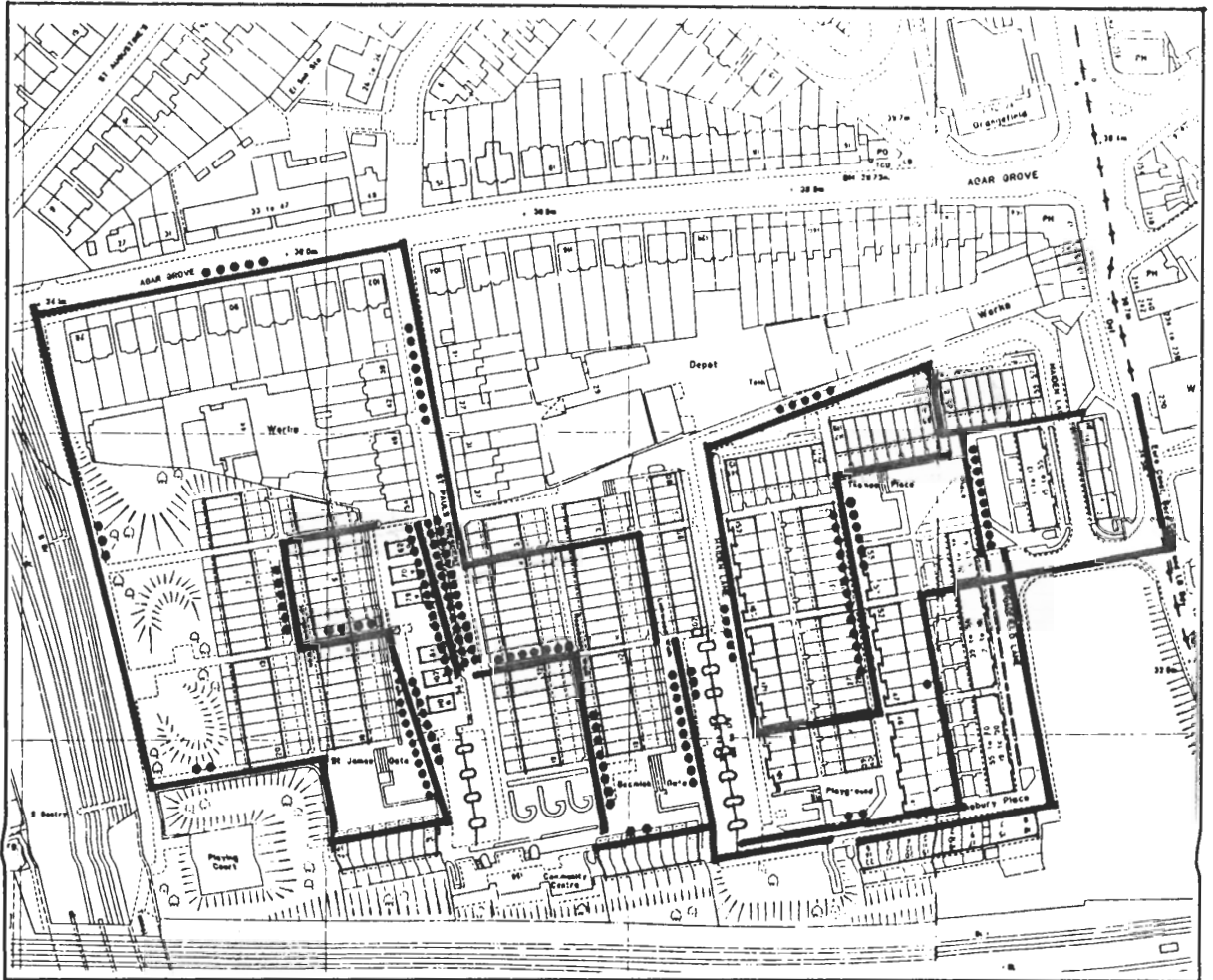


Figure 7. Map showing the encounter rate for children. One black dot represents one child per ten minutes of walking time.

The very poor level of adult movement within the estate can be explained in terms of the layout, by making an analysis of the layout using the 'space syntax' method. To explore a movement pattern we need to carry out an 'axial analysis'. Figure 8 is an axial map of the estate, that is, the set of longest lines that pass through all the open space of the estate - essentially a map of where one can move on the estate.

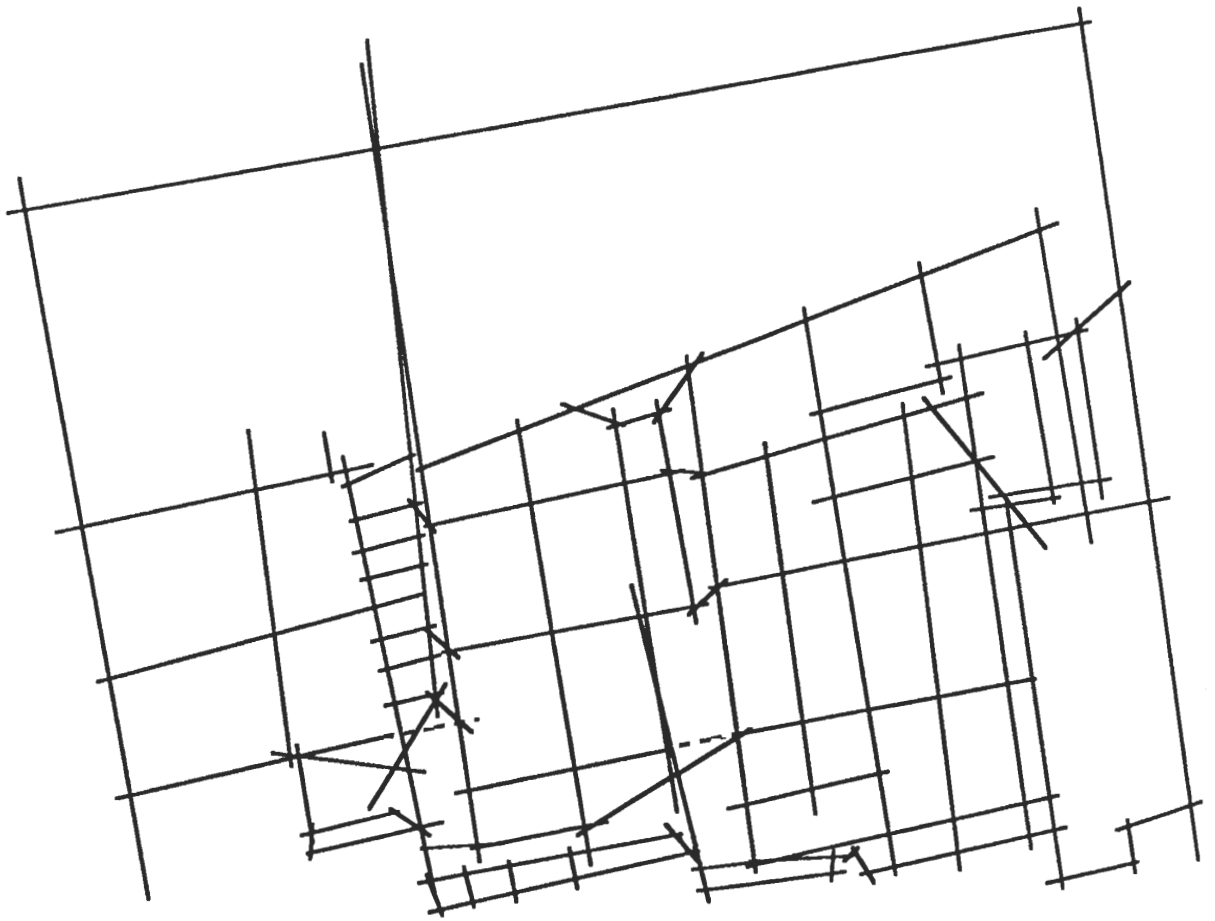


Figure 8. The 'axial map' of the estate describing the lines of direct access and sight on the estate.

The axial map is then analysed in two ways : first on its own, to clarify the internal structure of the estate; and second as part of a much larger area - in this case stretching from Kentish Town to Kings Cross (Figure 9) to establish how it relates to the structure of the surrounding area. The key variable in 'axial analysis' is called 'integration', which measures how many other lines must be used to pass from each line to every other line in the layout. In effect, 'integration' measures how complex all routes are from any line to all other lines in the area.

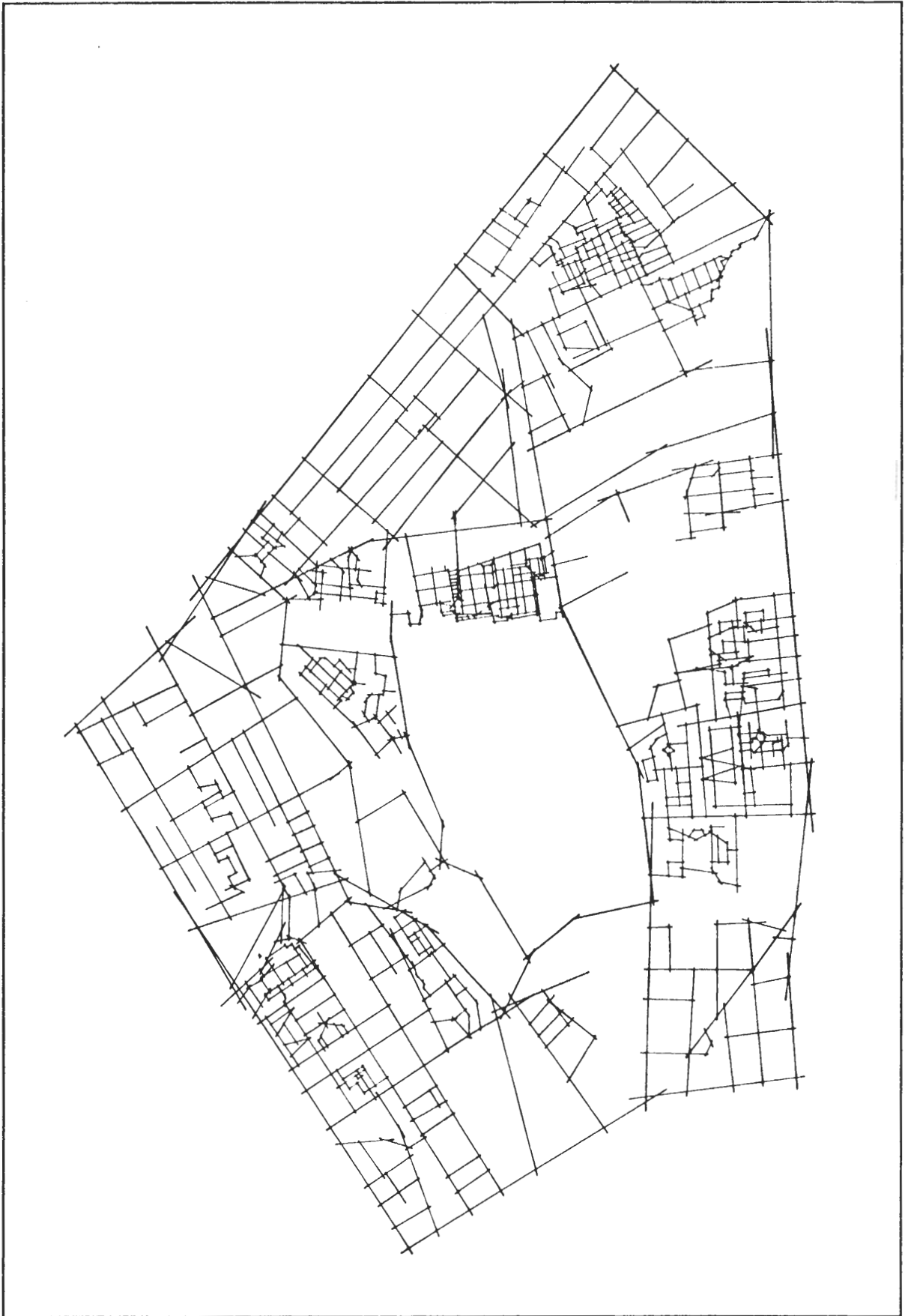


Figure 9. The axial map of the estate in the larger surrounding area.

The 'integration value' of a line has been found to give a good prediction

of the amount of adult movement along that line. Figure 10, for example, shows the correlation ($r = .744$) between integration and adult movement for 239 observed spaces all round the Kings Cross Railway Lands site.

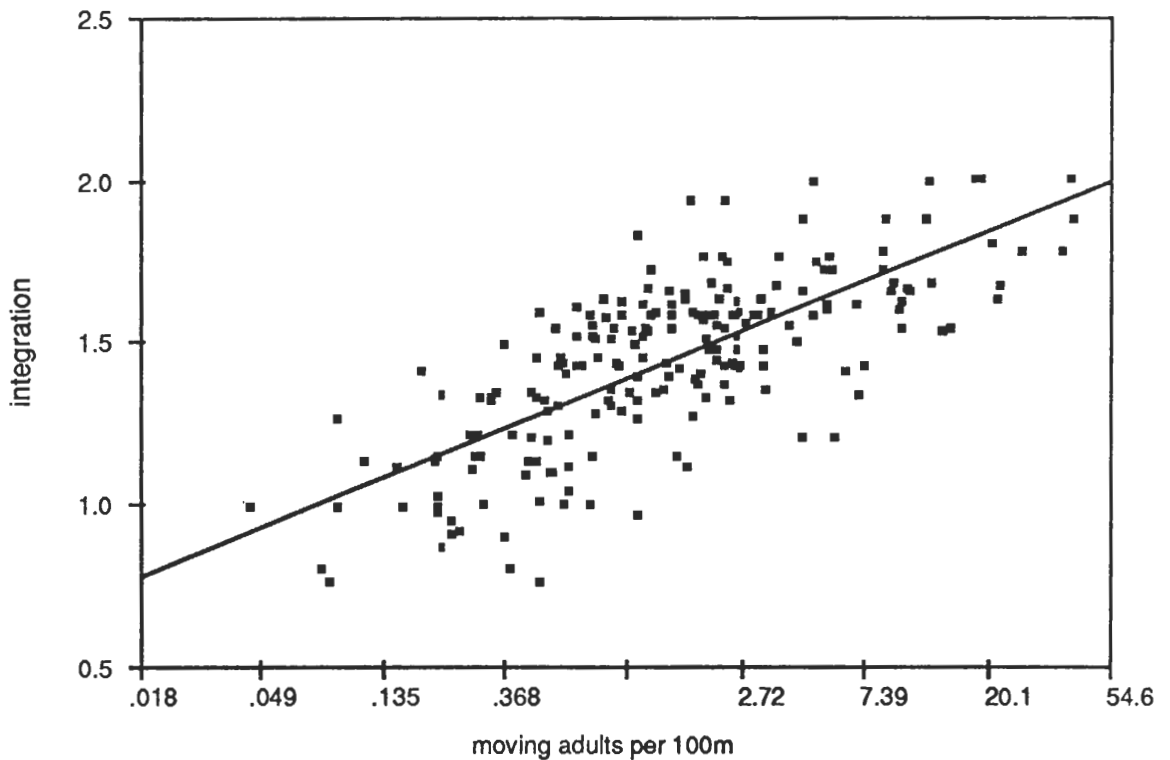


Figure 10. The correlation between numbers of moving adults and spatial integration in 239 sections of street surrounding the Kings Cross area, including the Maiden Lane estate. $r = .744$ $p = .0001$

Figure 11 shows the same correlation for the Maiden Lane estate with the integration values are taken from the layout of the estate only ($r = .446$ prob .01). The correlation is very poor, showing that the internal structure of the estate layout is not itself the main determinant of the movement pattern.

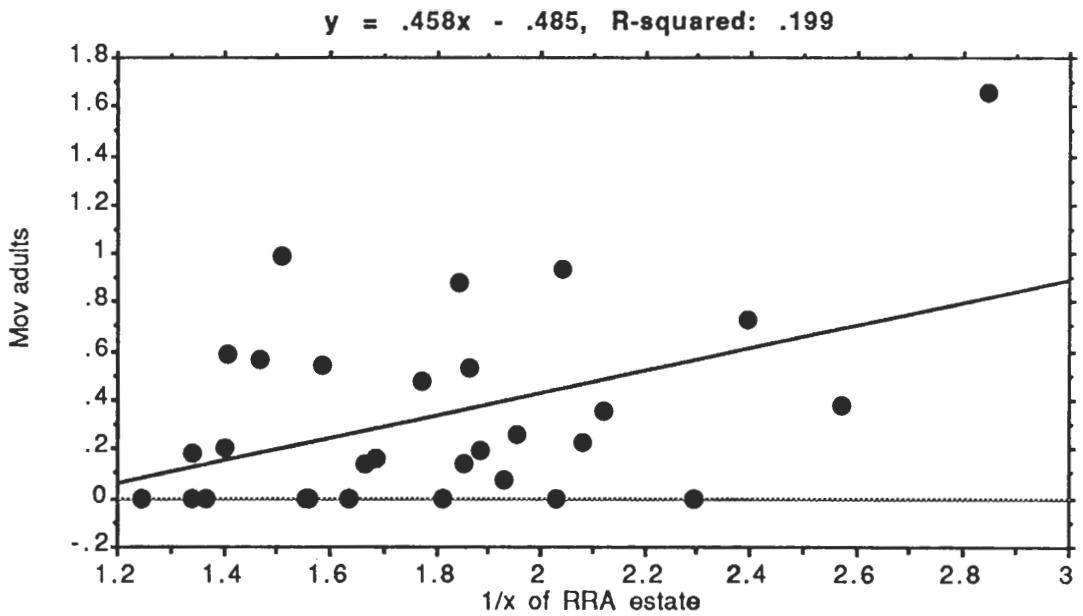


Figure 11. The correlation between numbers of moving adults and spatial integration of the Maiden Lane estate only.
 $r = .446$ $p = .01$

Figure 12, however, shows the correlation when the integration values are read from the estate embedded in the large surrounding area. The correlation is now much stronger, though untidy (as is often the case where encounter rates are very low). The pattern is also strongly banded, in the sense that the integration values seem to follow three

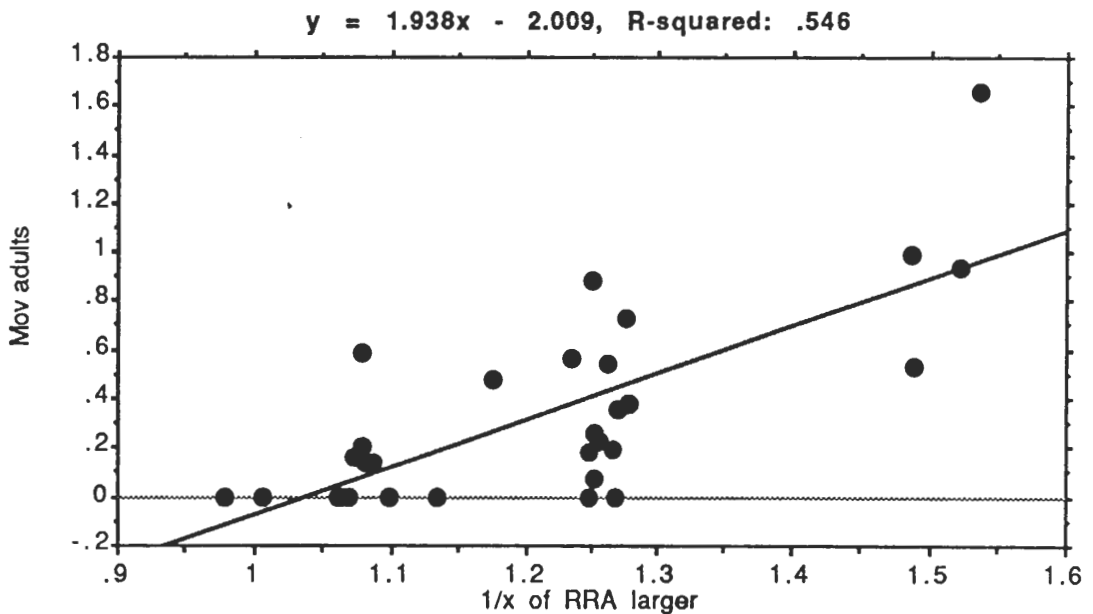


Figure 12. The correlation between numbers of moving adults and spatial integration in the Maiden Lane estate, where integration values are calculated on the basis of the large surrounding area.
 $r = .739$ $p = .0001$

vertical bands. This is because the pattern of integration at Maiden Lane when read in its urban context is dominated by axial depth from the outside. Each band represents spaces that are one step deeper from the outside.

Figure 13 shows the correlation between axial depth and integration :

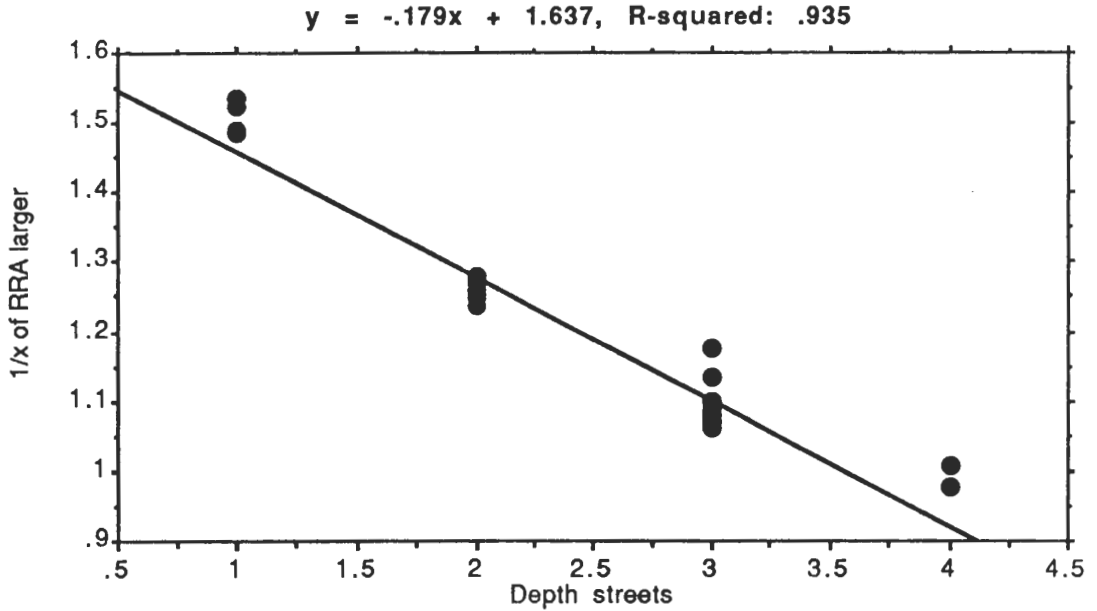


Figure 13. The correlation between axial depth from the surrounding streets and integration in the large area for the spaces in the estate.
 $r = .967$ $p = .0001$

and Figure 14 the correlation between axial depth and adult movement:

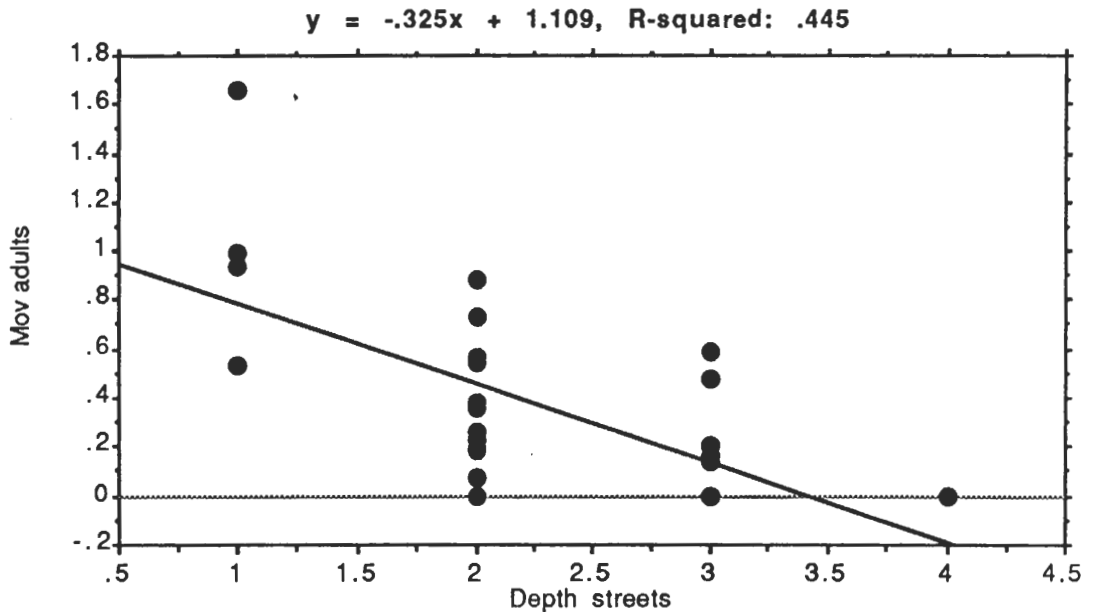


Figure 14. The correlation between axial depth and numbers of moving adults on the estate.
 $r = .667$ $p = .0001$

This, in a nutshell, is the fundamental problem of the Maiden Lane layout. Integration within the urban context occurs only on the very edges of the estate, and nowhere carries into its heart. The result is that natural movement is peripheralised, and frozen out of much of the estate. The estate has no internal pattern of integration to take the pattern of movement in the surrounding area and carry it through the estate in a structured way. The result is space that is empty for most of the time. At the same time, there is much access to the estate, but it is segregated. Segregated access is unused access, and unused access is dangerous access, since it permits access without natural surveillance.

This can be summed up formally in three analytic diagrams generated from the computer analysis. Figure 15 shows the integration 'core' (the ten percent of most integrated axial lines) of the estate when analysed on its own. The strongest line is St Paul's Crescent, followed by the line from Beamish Gate, passing through the garages under Maiden Lane Centre down two alleys to Broadfield Lane. The third is the Agar Grove side section of Maiden Lane and its continuation to St Paul's Crescent, the fourth is Rosebank Walk, the fifth the alley sections linking St Paul's Crescent to Linkwood Walk, and the sixth Maiden Lane Centre.

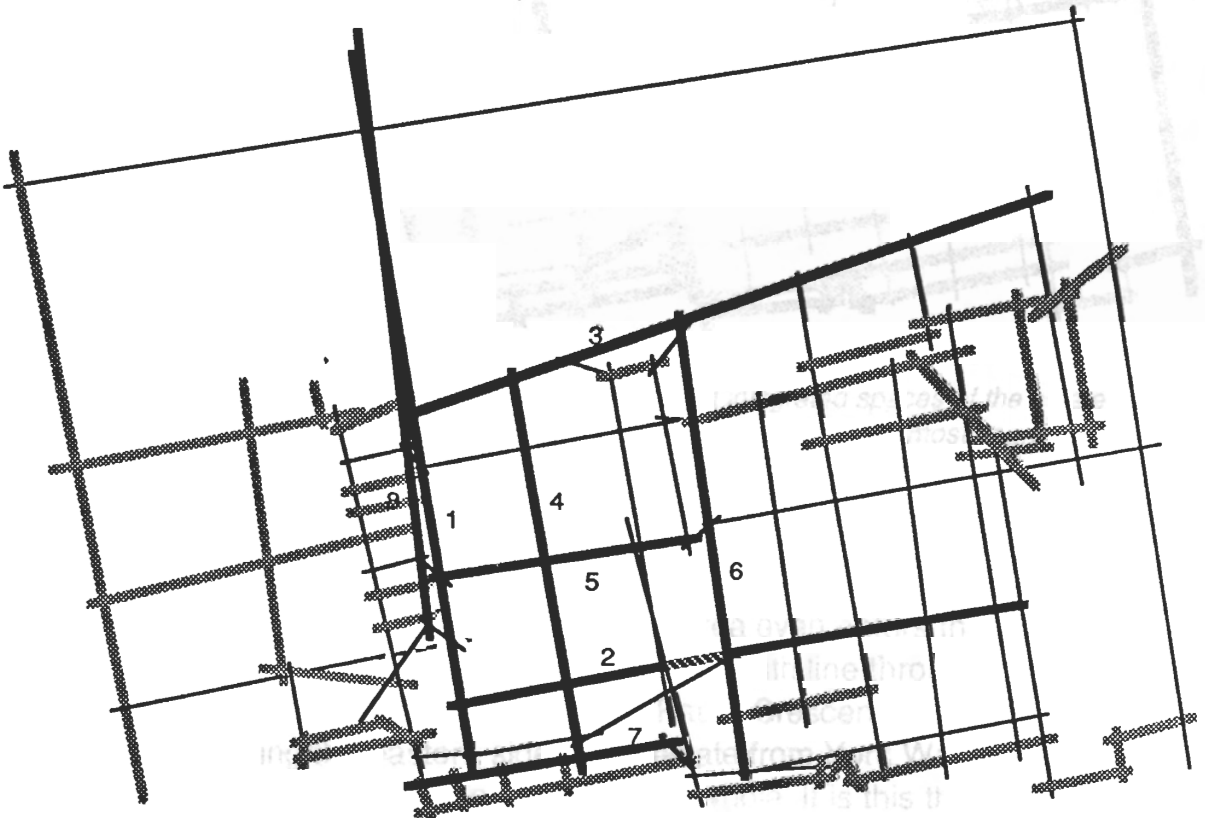


Figure 15. An integration core map showing the 10% most integrated spaces of the estate only in heavy black, and the 50% most segregated spaces dotted, the remainder are in thin lines.

Figure 16 then shows the integration core when the integration values are read from the estate as embedded in its urban context. In a normal urban area, these two maps would strongly resemble each other, indicating that the area has an internal structure which works in the surrounding urban context, thus ensuring that the area participates in the natural movement system of its parent area. In Maiden Lane, nothing like this is the case. The six most integrating lines in the estate when seen in the whole system are all lines entering the estate from the outside, some important, some insignificant. The core is peripheralised, and so is the natural movement pattern.

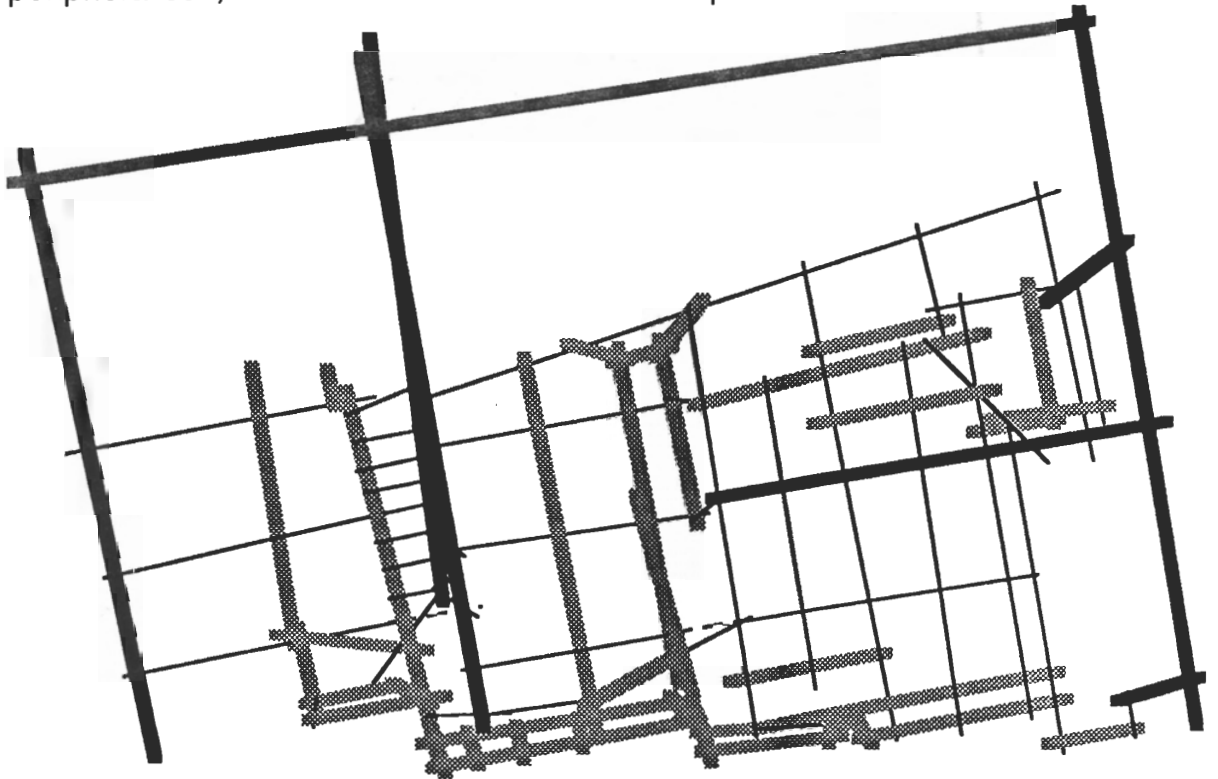


Figure 16. An integration core map showing the 10% most integrated spaces of the estate (calculated including its surrounding streets) in heavy black, and the 50% most segregated spaces dotted, the remainder are in thin lines.

Finally, we may look at Figure 17 which shows the integration-segregation pattern of the whole area, including Maiden Lane. It can be seen that no line of the integration core of the area even enters the estate. The strongest lines are, in fact, the north-south line through the green area on the western periphery, St Paul's Crescent, and the straight line entering the eastern side of the estate from York Way, but even these are relatively weak in the area as a whole. It is this that makes the structural isolation of the estate from its surroundings so strong.

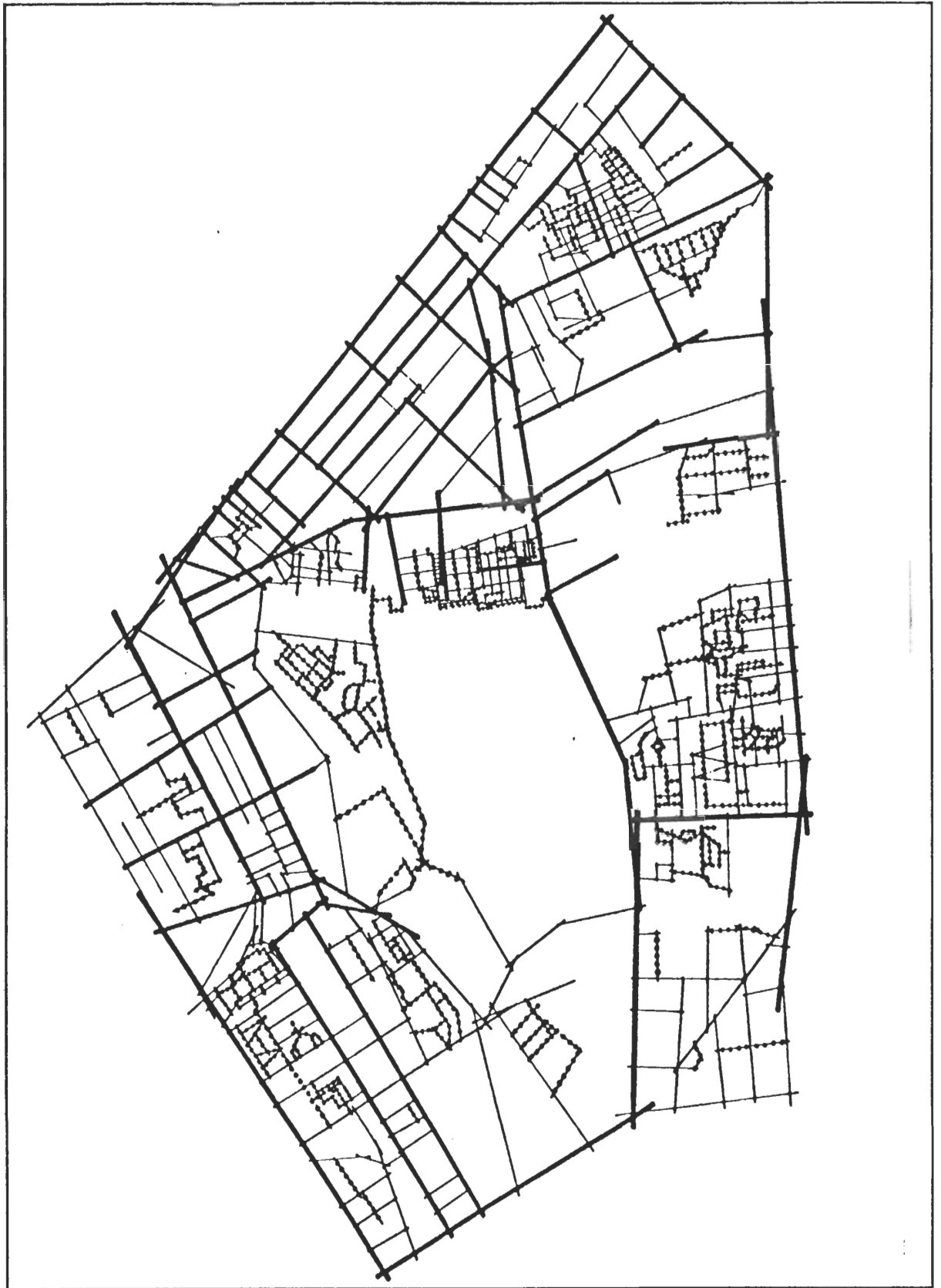


Figure 17. An integration core map showing the 10% most integrated spaces of the estate in the surrounding area in heavy black, and the 50% most segregated spaces dotted, the remainder are in thin lines.

The design history of the estate

The design history of the estate can throw light on how these problems of structural isolation have arisen in a design which seems at least internally to attempt to recreate an urban grid of predominantly low rise housing.

Maiden Lane was designed and constructed in two phases. Phase One, consisting of housing, shops, community centre and the majority of the car parking provision, is to the west of Maiden Lane where it divides the site north-south. Building began in 1976 and was completed in 1982. Phase Two consists only of dwellings, including the sheltered housing block. Building of the second phase began in 1978 and was completed in 1983. Both phases were designed by the London Borough of Camden which also acted as client, but each phase was designed by a different team within Camden's architecture department.

The original scheme design, prepared for discussion at Chief Officer level, was for development of the entire site without phasing. The job architects for London Borough of Camden were Gordon Benson and Alan Forsyth. They were aware that the site was a backland and that it could become a backwater. They believed that there was a risk that a new development could be isolated from the surrounding area and that this was something that should be avoided. This belief informed the initial sketch proposals drawn up in late 1972 (Figures 18 - 21).

The proposals tried to address the problem of isolation by providing substantial links into the surrounding area, in the form of three north-south roads connecting Agar Grove to public/estate facilities on the southern boundary of the site, and a further parallel route alongside the St Pancras railway track. These vehicular routes and the way in which they link into the surrounding area are shown in Figure 18. The two westerly routes were already feasible, in fact part of one of them, St Paul's Crescent, already existed. The two further links were to be achieved by freeing up the northern edge of the site. The industrial units sited there were to be relocated to the eastern edge of the site and connections to Agar Grove created by knocking through the terrace in two places. At the time Camden was considering the construction of a deck across the railway track on the western edge of the site. A west-east "major pedestrian route" was therefore also proposed over the tracks which would link the new estate with the existing estate to

the west. This route is shown in Figure 19.

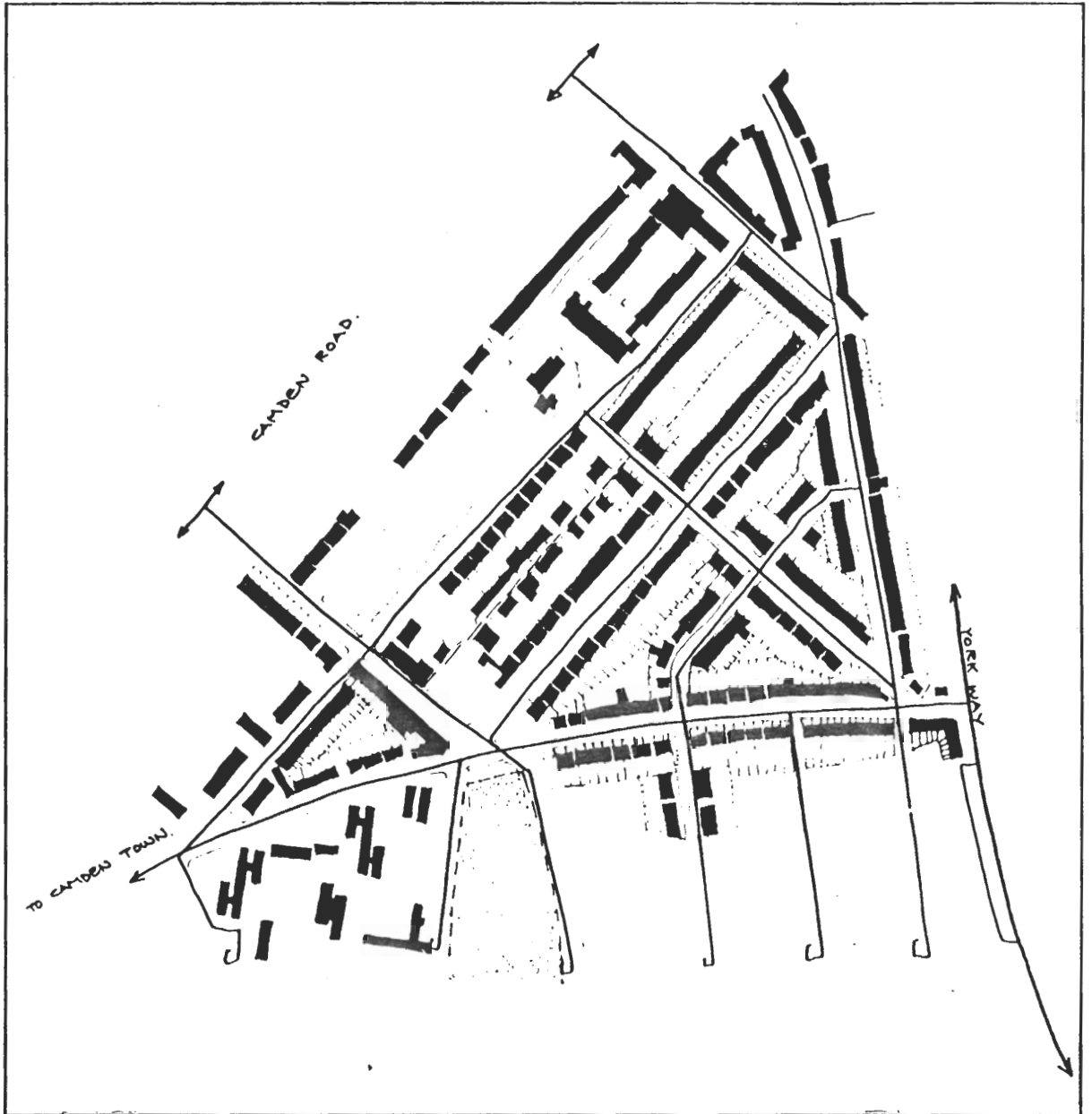


Figure 18. The diagram of vehicular routes connecting to the surrounding streets in the original sketch scheme.

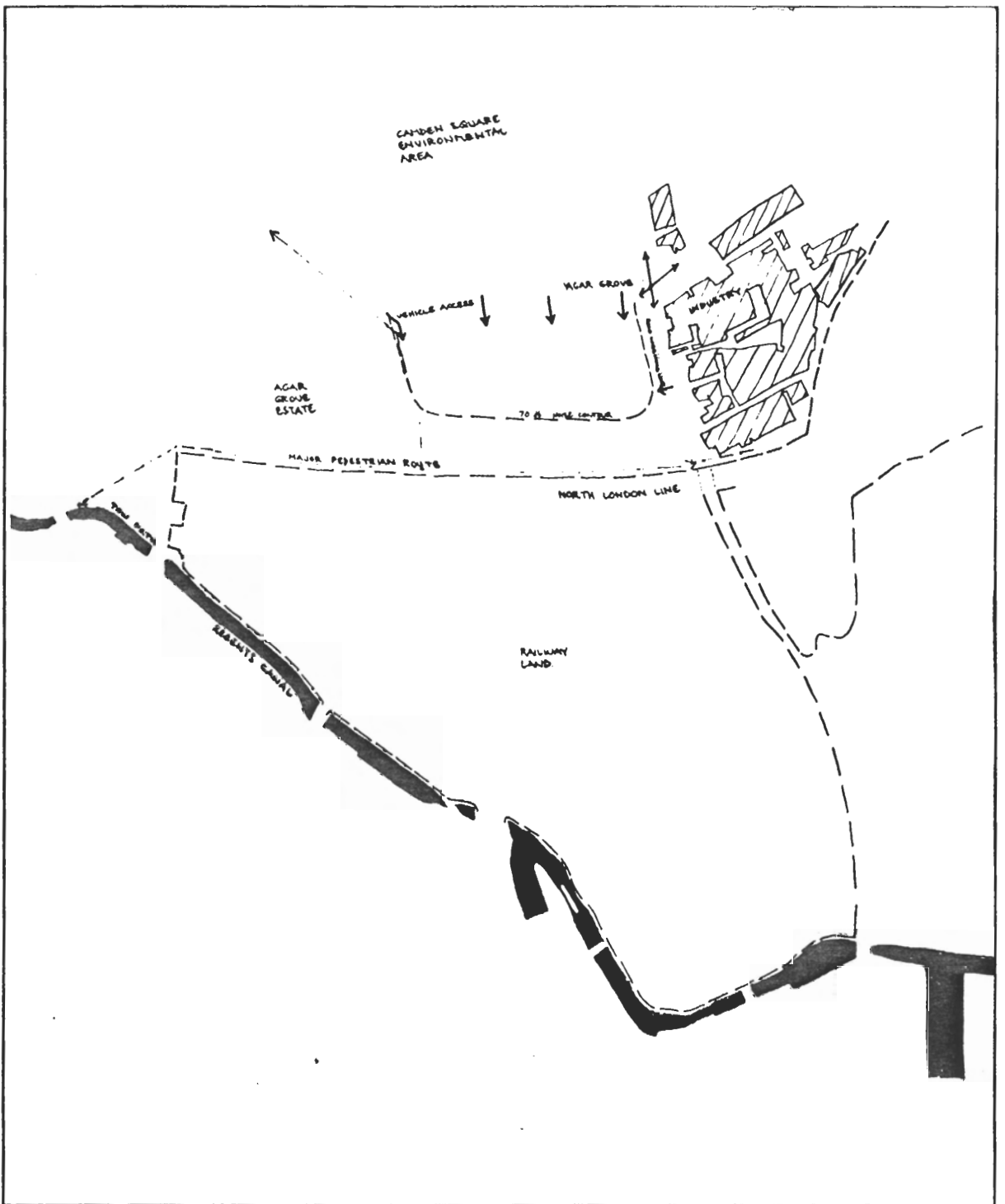


Figure 19. The original sketch schemes showing the Benson & Forsyth's design intentions for the site in terms of pedestrian and vehicular routes connecting the scheme to the surrounding area, before it was decided to phase the scheme.

However, after the scheme had been prepared uncertainties appeared over access to the eastern part of the site and negotiations for the relocation of the existing industry failed. It was therefore decided that the development should be phased, by making the only area that could be serviced from the edge of the site into the first Phase. This was the western portion of the site around St Paul's Crescent. The intention of building over the railway track was abandoned, so that the major pedestrian route to the west could not be built. In addition the public functions originally proposed for the southern cross route were mainly omitted. No strategic redesign took place at this stage to allow for possible limitations on access in future phases. The sketch scheme for 'Maiden Lane 1' was approved in January 1975 and a fast working drawings programme led to the tender report being approved in May 1976. This first phase is shown in Figure 21.

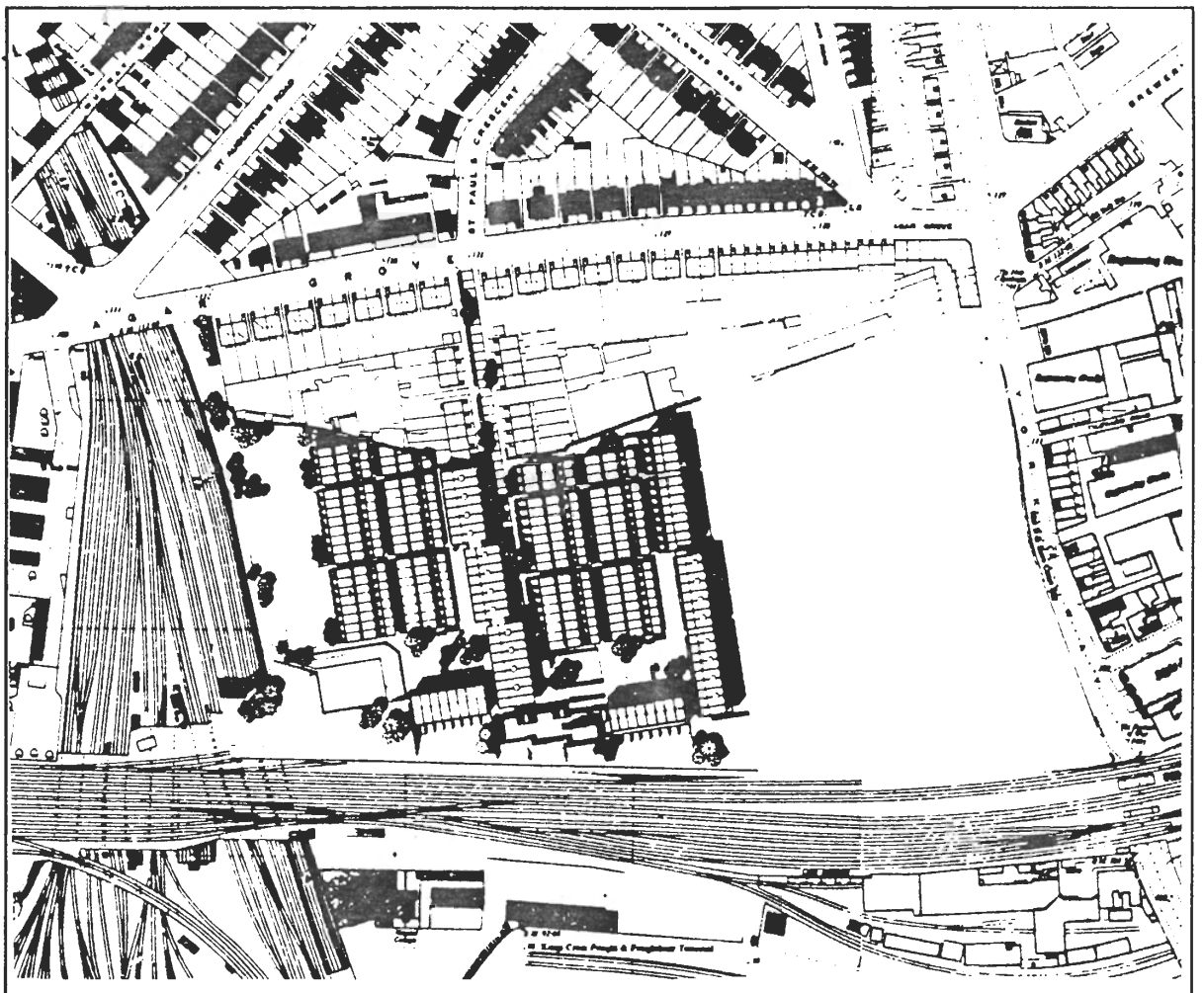


Figure 21. The reduced Maiden Lane Phase One scheme as built following the decision to phase development.

In June 1976 a report of the Director of Architecture was submitted to the Housing Development Sub-Committee recommending acceptance of a

feasibility scheme for Maiden Lane 2. Benson and Forsyth were not involved in the design or development of this phase of the development. By the time that the second phase scheme was drawn up the brief had changed, affecting dwelling mix and density. Existing industrial units blocked links to Agar Grove and following failures to finance its relocation the original concept of pedestrian and vehicular movement was no longer viable.

The importance of pedestrian and vehicular movement across the estate was emphasised throughout the history of the development. While Benson and Forsyth's original proposals were not carried through, it was nonetheless claimed in the 1976 report that 'good linkages, both pedestrian and vehicular, from York Way through to Maiden Lane Stage 1 have been preserved and enhanced'. The report on Maiden Lane 2 talks of 'a network of pedestrian streets' and 'a main north-south pedestrian street', and a 'loop road' (which has subsequently been closed off to vehicles in two places). But it is only in the original scheme drawings by Benson and Forsyth, that the importance of effective and continuous links into the *surrounding area* seems to be dealt with explicitly. In the revised version of the second phase the links into the surrounding streets are tortuous. The initial intention to continue a street pattern into the heart of the estate were in effect never realised because a series of extraneous factors were not responded to in the design as they arose. Many of the features which create the current problems of the layout would appear to have arisen from this design history.

Whatever the history, we have seen that the resulting layout of the estate has had a quite specific effect on the patterns of pedestrian space use and movement within the estate. The question that follows is: are there further effects on the experiences and attitudes of residents? If there are, then they can be expected to show themselves in terms of a correlation between spatial parameters describing the different locations on the estate, and the proportion of people in the various location groups having a particular experience or attitude.

The spatial distribution of crime and fear

We can begin by looking at the spatial distribution of crime and fear of crime by using location group analysis. Are residents in different locations on the estate more or less vulnerable to crime, or more or less fearful of it? The social survey shows that the important aspects of fear are feeling unsafe out on the estate at night, and fear of burglary. Both, it turns out, are strongly correlated with a measure of

'depth' which assigns each location the depth of the line onto which it fronts, and treats the green strip on the western periphery of the estate as outside the estate rather than inside. This makes sense in terms of crime and fear, since there is access to this strip in the south-west as well as in the north west, and it is possible to walk through without going into the estate. The south west access is highly segregated in the urban area as a whole (as well as with respect to the estate) and generates almost no movement. This means that it plays no role in the natural movement pattern of the estate, but does play a role in its vulnerability to crime and fear of crime, since it provides unused, but available, access. Figure 22 is the scattergram of 'feeling unsafe' against this measure of depth, and Figure 23 the same for fear of burglary. Testing these relationships against other correlating variables show that both of these relations are robust, although having children in the home also seems to be implicated.

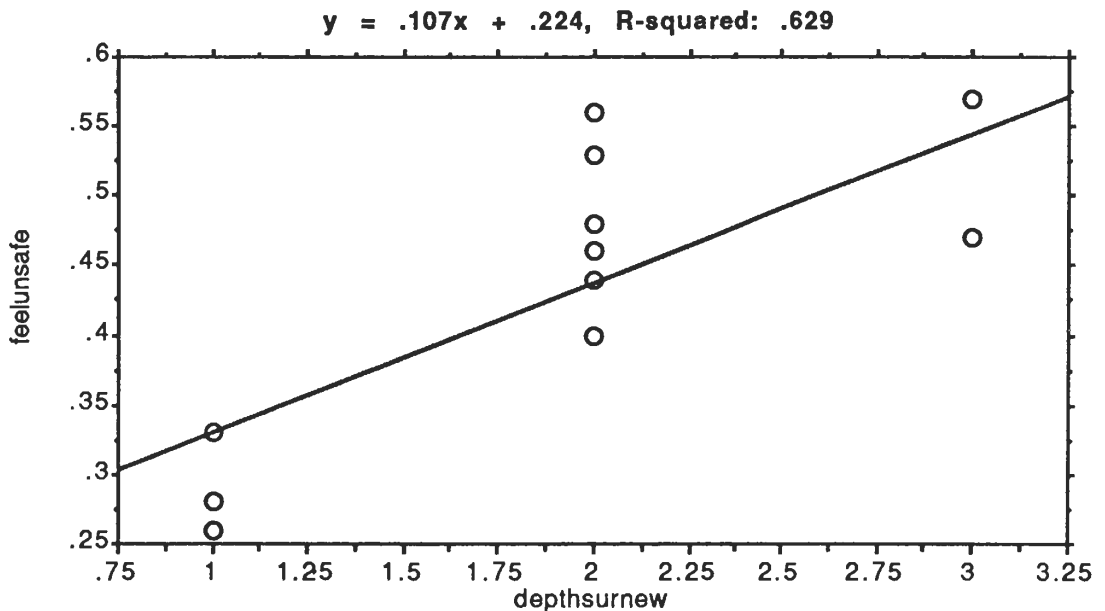


Figure 22. The correlation between 'feeling unsafe' and depth from the periphery of the estate.

$r = .793$, $p = .0012$

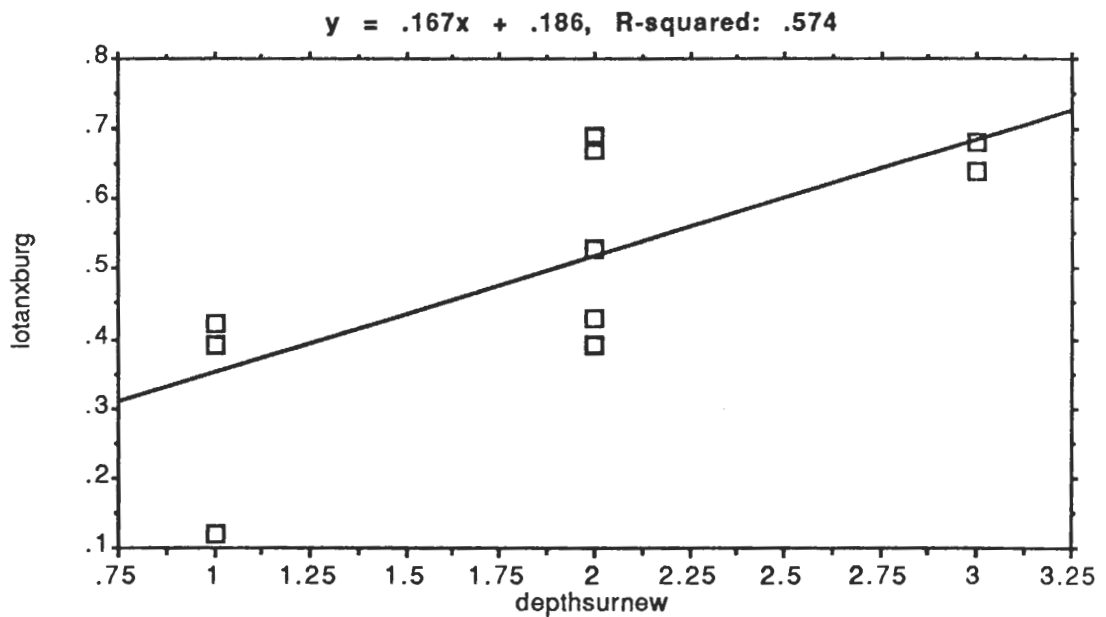


Figure 23. The correlation between 'anxiety about burglary' and depth from the periphery of the estate.

$r = .758$, $p = .0027$

When we look at actual crimes reported by residents (the questionnaire specifies no time period, so for each location group we divide the rate of mugging or burglary by the mean length of residence - undoubtedly a crude measure, but the best that can be done with the data in the report), we find that there are clear relationships with depth on the estate. For example, there is a correlation of .503 (prob .0797) between the mugging rate and depth measured from the edge of the built fabric (i.e. in terms of the numbers of line segments bounded by buildings one must pass through to reach a particular location). This relation would be very much stronger ($r = .721$) but for one location where no respondent reported having experienced a mugging.

The relation of depth to burglary is more ambiguous. At first, there does not seem to be much relation, but inspection of the data shows that there is one location that has far more burglaries than any other : Broadfield Lane, which opens onto the eastern edge of the estate opposite the factory between York Way and the estate. It is not possible to deduce from the evidence why this location seems so much more vulnerable than others. However, if we omit this exceptional location from the calculation, we find a very strong correlation between all the depth measures and numbers of burglaries over time of residence, particularly the measure of depth from the surrounding areas which also correlates strongly with feeling unsafe and being anxious about burglary (Figure 24.).

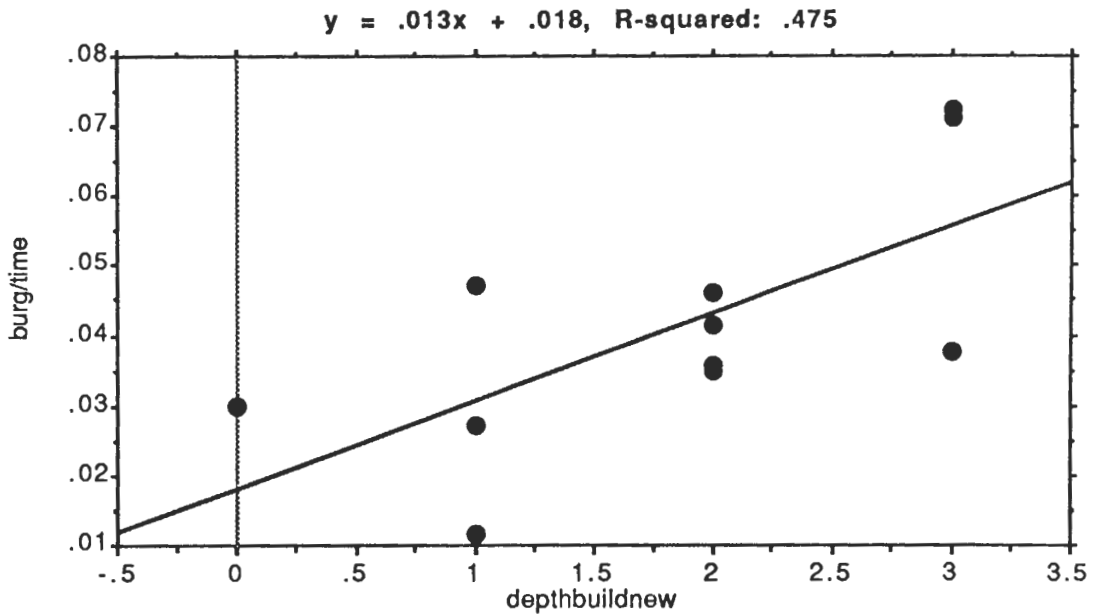


Figure 24. The correlation between burglary over time and depth from the surroundings, omitting Broadfield Lane.

$r = .689$ $p = .01$

We thus have an outline sketch of the spatial pathology of the estate : the complexity that freezes out natural movement and makes space empty for much of the time, also creates a pattern of fear and vulnerability to crime. It is clear that the prime objective of changes to the spatial layout must be to remedy this problem. Before looking at the various possibilities, however, we must look again at some of the social survey data to see if the spatial layout also affects the attitudes of residents in a significant way.

Time, space and attitudes

Correlating locations with attitudes is a more complex matter than correlating them with crime and fear. Attitudes are far more likely to be affected by who you are, what your expectations are and what your experience has been. We must be confident that we can disentangle any effects of location from the effects of personal circumstances and management policies - being a single parent, being part of a family with children, being a pensioner, being over-crowded, and so on. This means we must first know how people in different circumstances are distributed in the estate. Once we know this, we are less likely to mistake social and management effects for the effects of architecture.

The first fact we must take account of is that houses are concentrated in the west and centre west of the estate, maisonettes in the centre

and east of centre, flats for the most part in the east, with one exception, and bedsitters wholly in the east. Bearing in mind that children are located in 96% of the houses and 76% of the maisonettes, but only in 22% of the flats and (unsurprisingly) none of the bedsitters, it is clear that the distribution of dwellings on the estate is also a distribution of different personal circumstances. Figures 25 and 26 show these distributions in a convenient graphic way. In Figure 25, the horizontal axis plots the west-east distribution of locations, beginning with Springbank Walk in the west, and ending with Maiden Lane (York Way) in the east, while the vertical axis plots the proportion of households with children in each location. Proportions of children fall, more or less, as you move west to east.

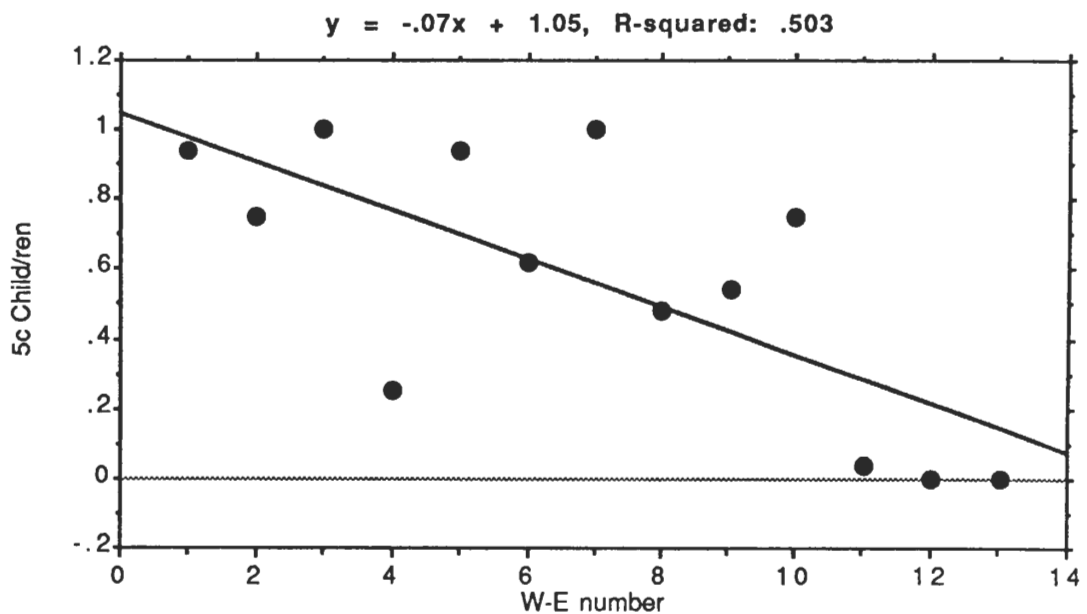


Figure 25. Diagram showing the proportion of households with children as these are distributed from West to East across the estate.

In Figure 26, the vertical axis shows the proportion of single parent families - a weaker, but still marked pattern. Figure 27 plots the mean length of residence of the location groups against the west-east axis, showing that the spatial distribution across the estate is also a time distribution in the sense that as you move westwards the mean length of time residents have been on the estate increases more or less linearly.

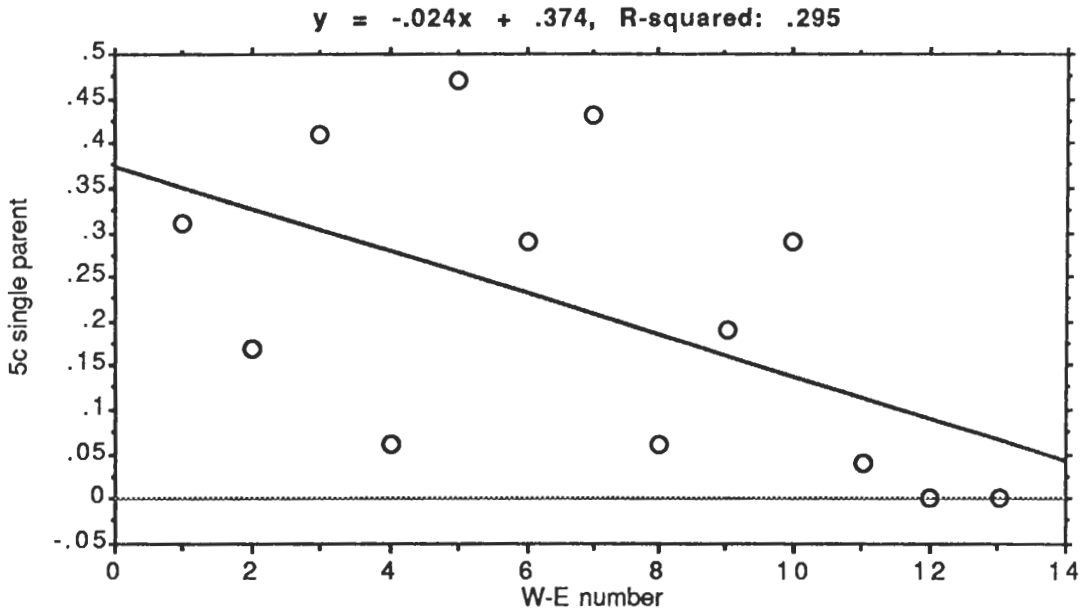


Figure 26. Diagram showing the proportion of single parent households as these are distributed from West to East across the estate.

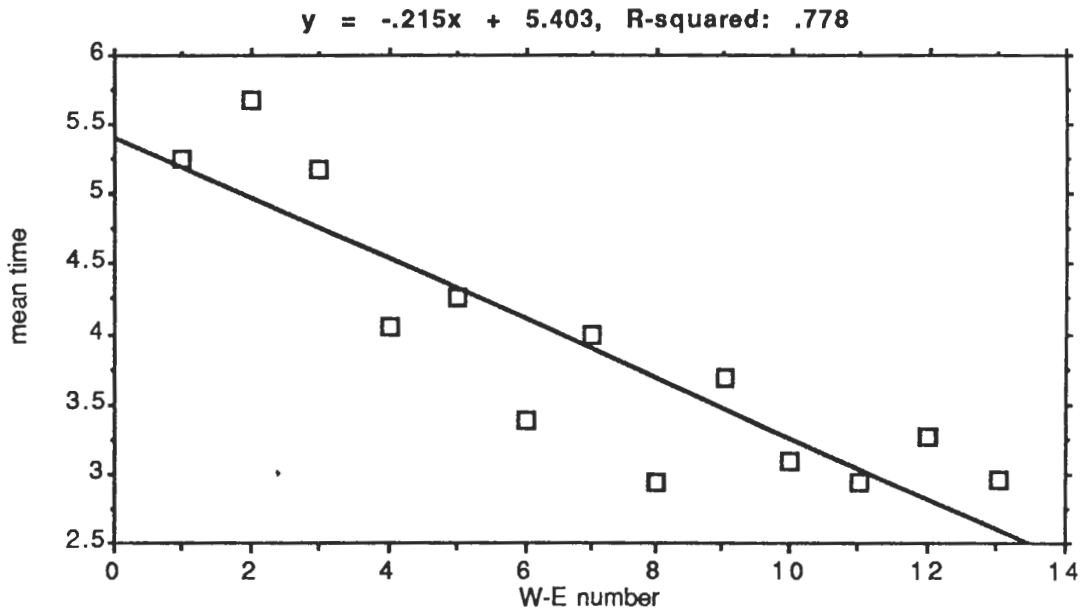


Figure 27. Diagram showing the average length of residence in years of households as these are distributed from West to East across the estate.

These patterns have obvious knock-on effects on people's experiences of living in different locations on the estate. For example, as the Hunt Thompson report notes, the perception of friendliness on the estate is strongly affected (as one might expect) by having children, and by the length of time people have lived on the estate. Figure 28, for example, shows the spatial distribution of 'having no friends on the estate' against mean time on the estate.

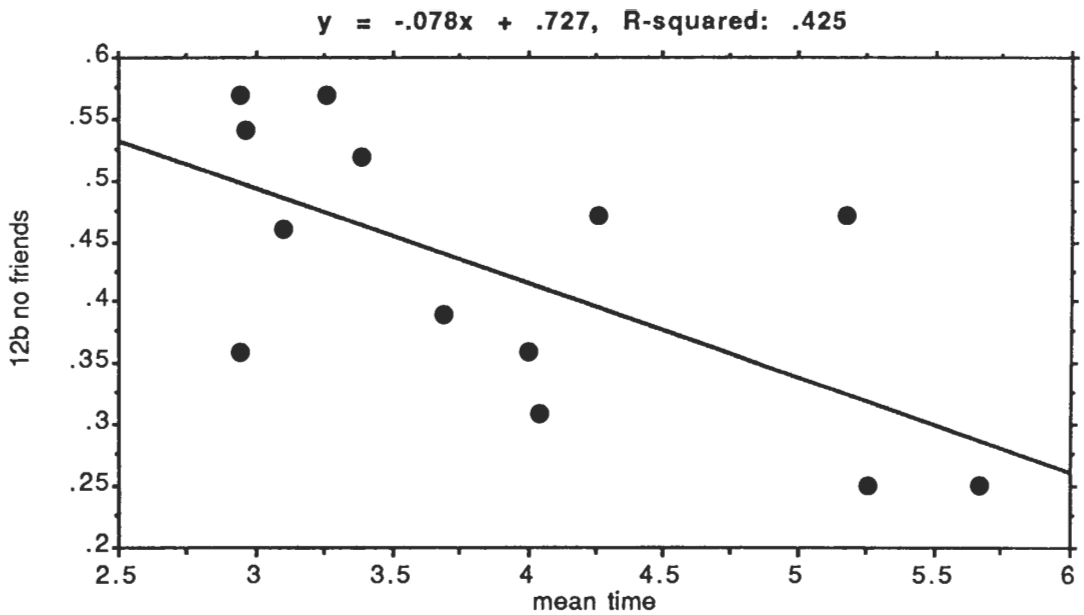


Figure 28. The correlation between proportions of respondents stating that they have no friends and mean length of residence on the estate in years, by location groups across the estate. $r = -.652$ $p = .016$

Figure 29 then shows how having children influences the assessment of the estate as friendly. Further analysis suggests that there is not a great deal to add to this. Remembering that a majority of residents still assessed the estate as friendly (43%) rather than unfriendly (30%), and that finding it friendly seems to follow a not unexpected pattern with length of residence and having children as the prime determinants, there seem to be no grounds for regarding the friendliness of the estate as a fundamental cause of malaise.

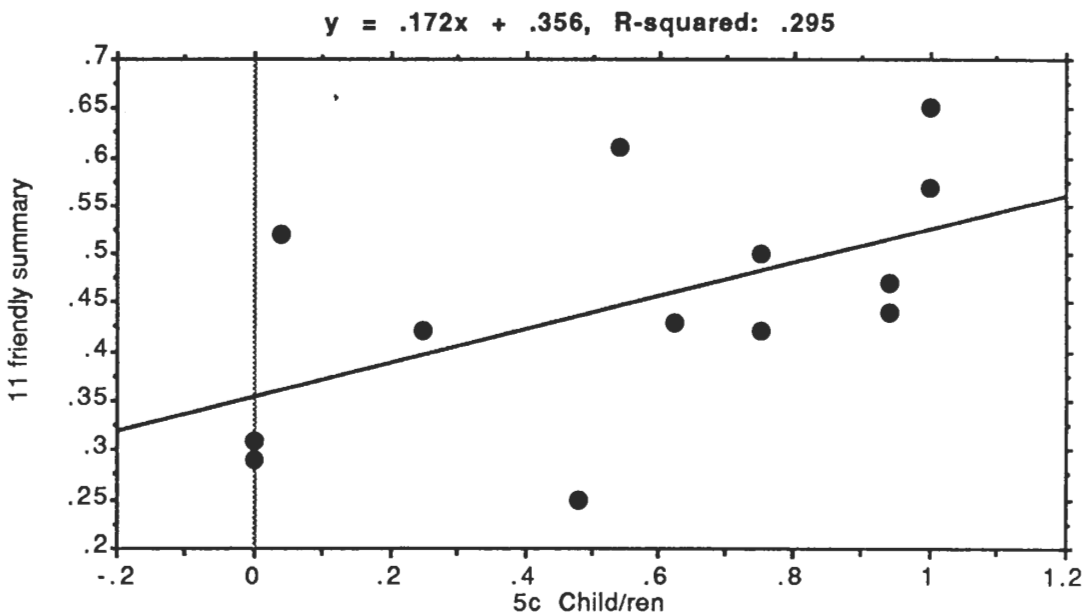


Figure 29. The correlation between proportions of respondents stating that they find the estate friendly and proportion of households with children. $r = .543$ $p = .05$

This does, however, crystallise the problem for the researcher. Because management policies have resulted in a certain distribution of children and average lengths of residence on the estate, we find that other factors which follow on from these are also spatially distributed. We must therefore go to some lengths to eliminate these factors from our analysis if we hope to identify what the independent effects of the architecture are on attitudes to living on the estate. However, it is only by doing this that we can hope to target changes at the root causes of the estate's problems.

The following analysis of attitudes by location groups is therefore presented with a 'health warning'. Although within the limits of the data (and time) available, every effort has been made to separate out the different influences on attitudes, it cannot be guaranteed that this can always be done successfully. The analysis therefore reports what seems to be the case on the estate, according to the the best evidence we have, targeting key 'summary' attitudes of satisfaction or dissatisfaction with the dwelling and liking or not liking the estate, and wishing to leave or stay in the dwelling or on the estate.

The first and most obvious step is to check the distribution of attitudes against the west-east axis and against the mean time spent on the estate. Figure 30 is a correlation matrix showing two important results : first, that attitudes are strongly correlated with each other; second that they are not correlated with the west-east distribution, or with time (or the variables like friendliness which depend on time). This immediately creates two *prima facie* suspicions : first, that we are dealing with attitudes that are focussed not on specific issues, but on general indicators of satisfaction or dissatisfaction; second, that this distribution of complexes of attitudes is likely to have some underlying cause which is not simply the west-east distribution, or its correlates like time on the estate or its perceived friendliness.

W-E number	1										
mean time	-.882	1									
10 est like	.277	-.084	1								
10 est dislike	-.395	.323	-.83	1							
16a home secur sat	.332	-.342	.432	-.429	1						
16a home secur disat	-.404	.33	-.545	.497	-.969	1					
16a dwel app sat	.055	.162	.773	-.567	.439	-.51	1				
16a dwel app disat	-.218	-.091	-.817	.502	-.294	.436	-.831	1			
16a dwel lay sat	.509	-.366	.793	-.655	.422	-.488	.565	-.788	1		
16a dwel lay disat	-.495	.338	-.844	.657	-.456	.534	-.627	.812	-.98	1	
depthsurrounds	-.31	.033	-.783	.761	-.409	.55	-.711	.605	-.454	.547	1

Figure 30. Correlation matrix showing the inter-correlation of attitudes, and the lack of correlation with mean time on the estate or E-W location.

The scattergrams of attitudes against the west-east axis show, however, that there *is* a spatial distribution of attitudes on the estate, but that it is curved (see Figures 31 and 32 for example, though many other attitudes follow the same pattern). In case after case - though to varying degrees - attitudes are more positive to the east and west of the estate, and more negative in the centre. This of course is the 'centre problem' amply documented in the Hunt Thompson report, as a concentration of dissatisfaction at the centre of the estate. But if we return to Figure 30 and read along the bottom line we see that all of the attitude variables correlate linearly with the depth variable that was so strong on the distribution of crime and fear. The centre problem, it seems, has a more specific spatial form, and once again it seems to be the problem of depth.

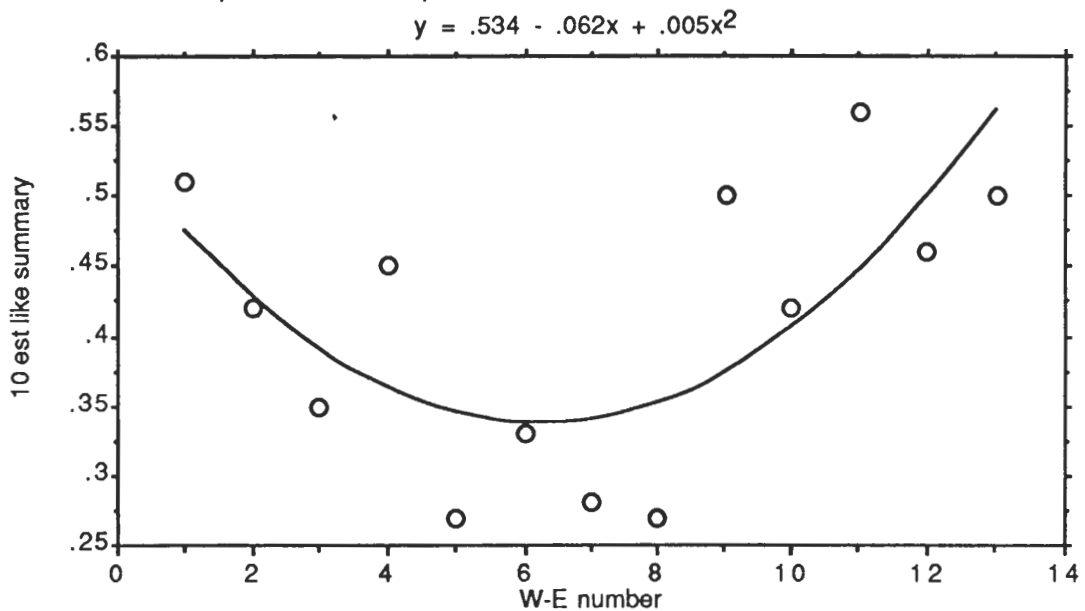


Figure 31. The distribution of liking the estate by location groups as these are distributed West-East across the estate.

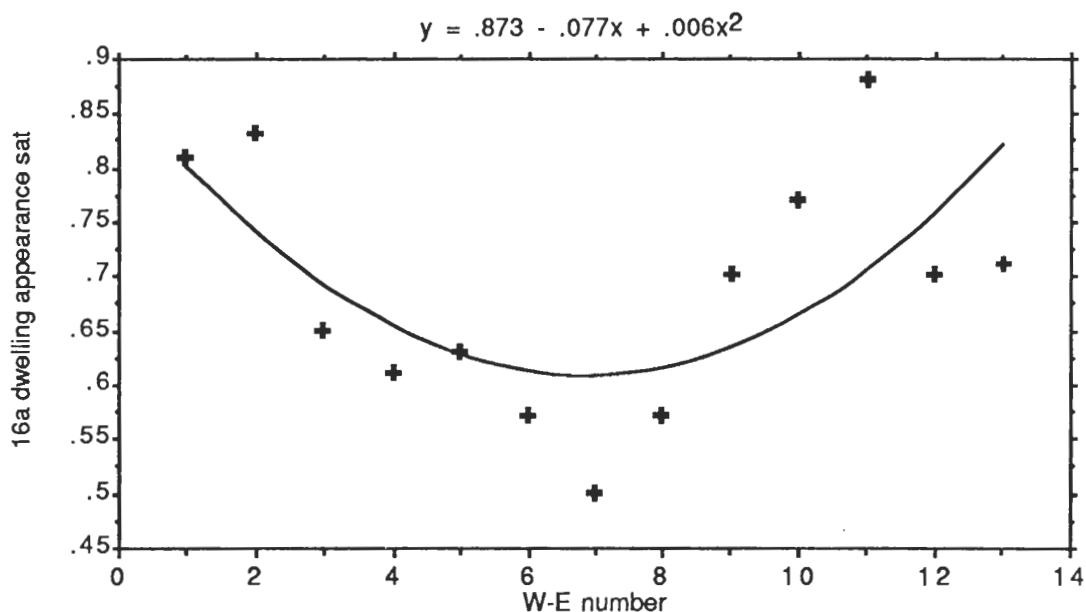


Figure 32. The distribution of satisfaction with dwelling appearance by location groups as these are distributed West-East across the estate.

Does this mean that the distribution of attitudes should be spatially explained? It does not necessarily follow. We must first be sure that the process of allocating households to locations on the estate is not responsible in some way. There is a natural way to explore this possibility. There are four locations which contain only houses: Springbank Walk, Bowmore Walk, Rosebank Walk and Linkwood Walk in west-east order, and also in order of mean length of residence on the estate. Any pattern among these ought to be a useful clue to what is going on, since it is less likely to be the product of differences in household or dwelling type.

If we first plot attitudes for these four locations against the west-east distribution we find a very surprising result: a series of near perfect correlations for a whole series of attitudes (Figures 33 and 34 for example). A similar result is found by plotting the same attitudes against mean time (Figures 35 and 36) on the estate. Now the fact that these distributions are so strongly linear, (while the depths of the locations is either two or three) suggest strongly that *the time variable is the key one, not depth*.

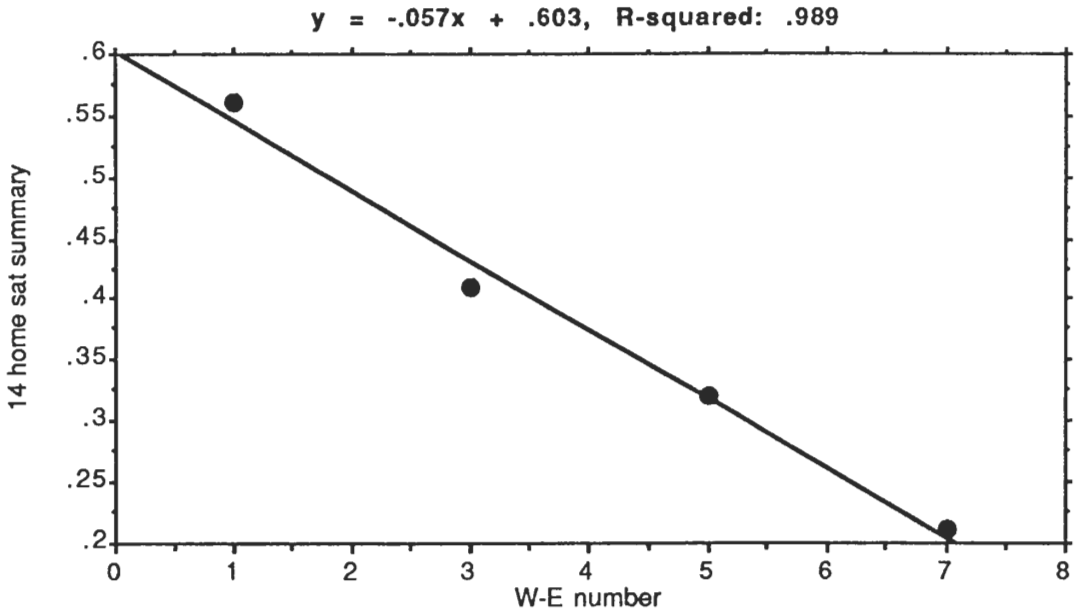


Figure 33. The distribution of satisfaction with the home for the four location comprising houses from West to East across the estate.

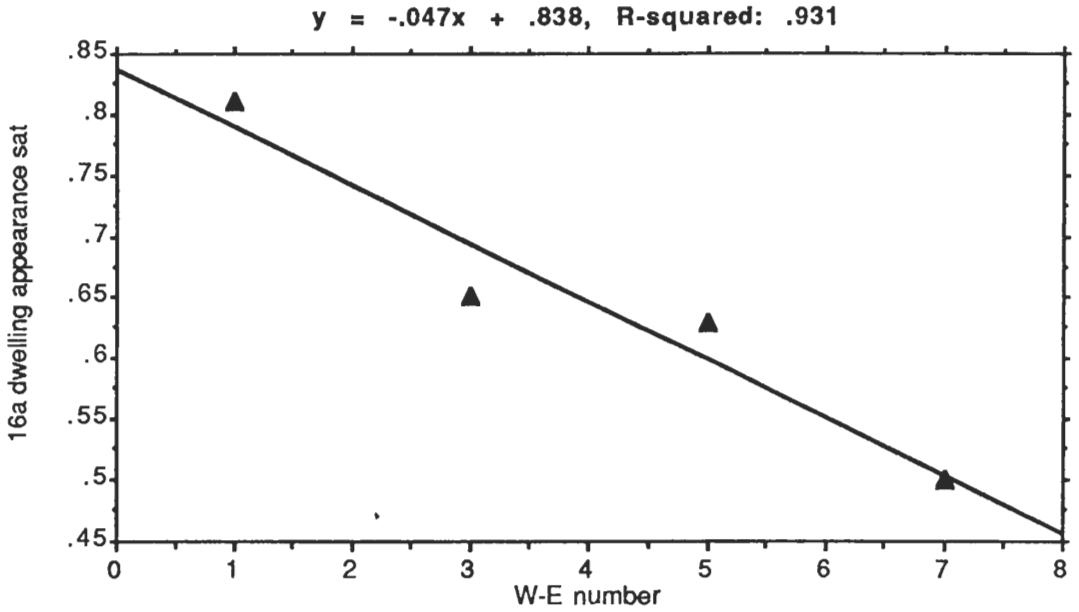


Figure 34. The distribution of satisfaction with the dwelling appearance for the four location groups comprising houses from West to East across the estate.

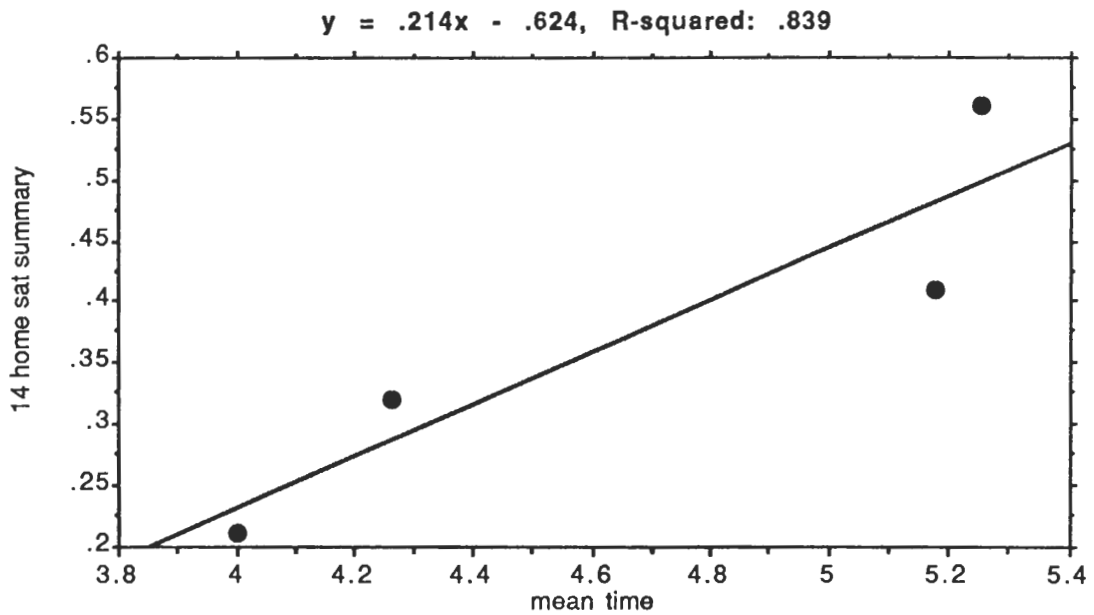


Figure 35. The correlation of satisfaction with the home for the four location groups comprising houses, with mean length of residence on the estate.

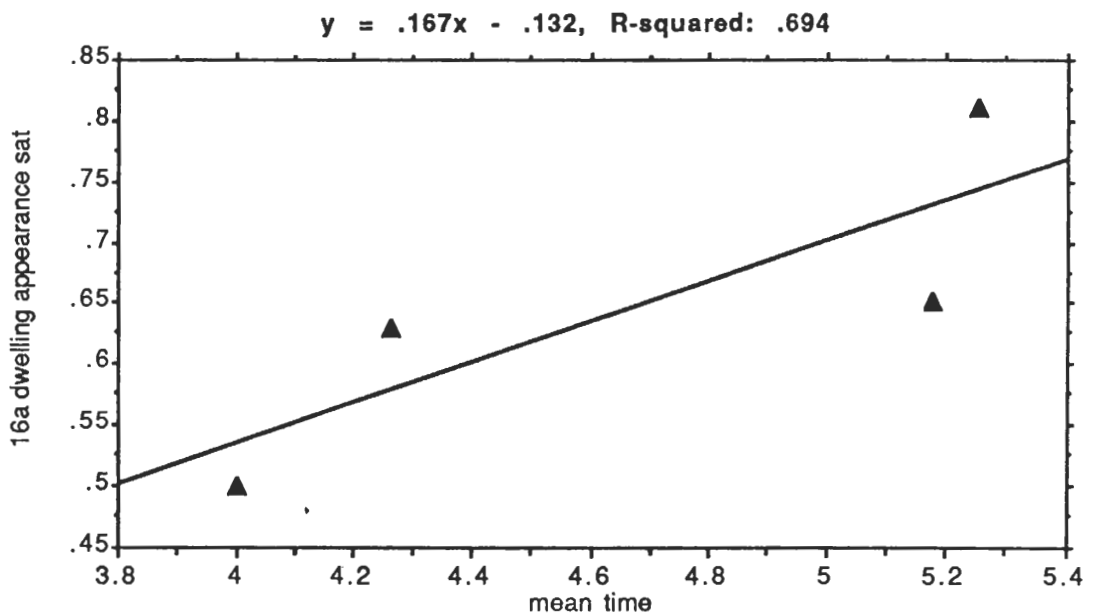


Figure 36. The correlation of satisfaction with the dwelling appearance for the four location groups comprising houses, with mean length of residence on the estate.

If we then look at the crime and fear related variables, however, we find no such linear distribution, though we do find that the mean scores for the deeper two are in all cases worse than those for the shallower two. This suggests that crime and fear may after all be related to depth, even though attitudes are not.

What then is responsible for the linear patterning of attitudes with time? The 'subjective' (expressing the view that one has adequate

bedrooms) and 'objective' (the numbers of people per bedroom) measures of overcrowding provide an important clue. First, we note that for the houses the two are almost perfectly correlated with each other (see Figure 37). This is not found on the estate as a whole, presumably because expectations are different as to what constitutes adequate bedrooms in different household types. Second, and most important, both have strong linear correlations with the same series of attitude variables that correlated with time. Third, as with time, there is no correlation with crime and fear. These are all summarised in the correlation matrix shown in Figure 38 below.

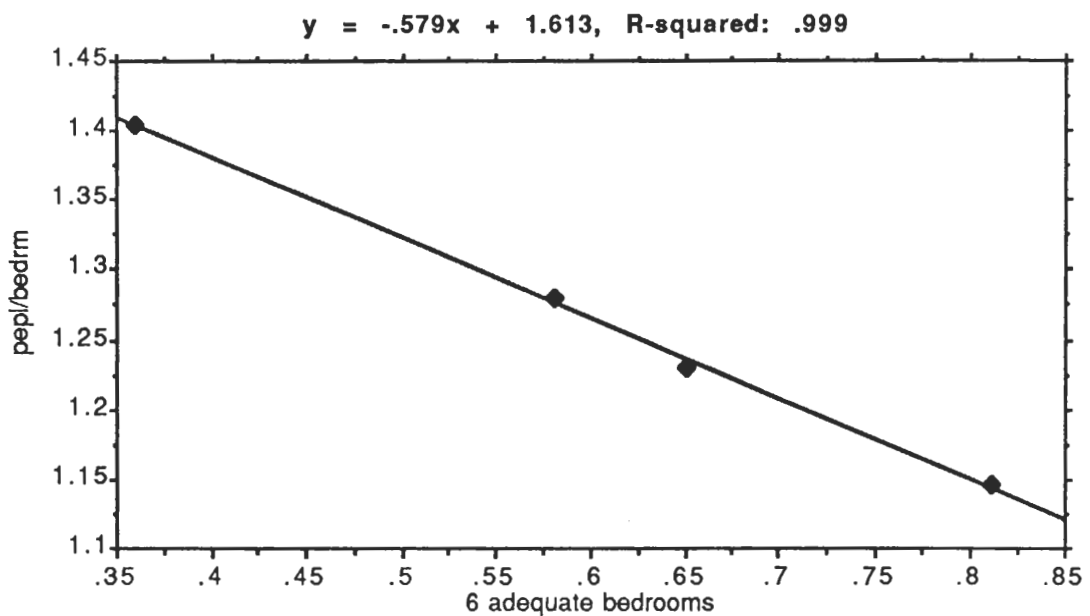


Figure 37. The relation between numbers of people per bedroom and reported adequacy of bedrooms for the four location groups containing only houses.
 $r = -.999$ $p = .000$

Correlation Matrix for Variables: X1 ... X8

	6 adequa...	pepl/bed...	10 est li...	14 home...	16a dwe...	feelunsafe	lotanxbu...	lotanxatt
6 adequate bedrm	1							
pepl/bedrm	-.999	1						
10 est like sum	.837	-.836	1					
14 home satis	.981	-.981	.925	1				
16a dwell app sat	.983	-.977	.892	.983	1			
feel unsafe	-.083	.073	.453	.113	.001	1		
lot anx burglary	.102	-.065	.199	.098	.256	-.086	1	
lot anx attack	-.054	.091	.12	-.036	.111	.025	.983	1

Figure 38. Correlation matrix showing the relation between numbers of people per bedroom, reported adequacy of bedrooms and satisfaction with the estate and dwelling and fear of crime for the four location groups containing only houses.

There are only two possible explanations of this. Either the allocation policies have been allocating bigger and bigger families to the same sized houses. Or those with bigger families who were allocated earlier on have moved out, leaving more overcrowded households in the more recently occupied locations. This could be checked against records. But either way, there can be no doubt that the distribution of attitudes is being produced primarily either by a management process of allocation, or by a social process of differential moving out. At least in the case of the houses we can thus be clear. The spatial property of depth is clearly involved in the distribution of crime and fear. But as far as attitudes are concerned, the depth factor is overlaid either by a process of allocation or a social process.

Analysis of the house locations suggests why the most unfavourable locations are at the centre of the estate. This can be clarified for the estate as a whole (i.e. all types of location) by considering a new measure of overcrowding which combines the numbers of people per bedroom with household size. By multiplying the number of people per bedroom by household size for all locations on the estate we obtain a figure that weights the degree of overcrowding according to the household size. Correlating this figure with the perception of 'adequate bedrooms' gives a correlation of .672 with a linear scatter. This figure also correlates linearly with key attitudes described above (for example, disliking the estate at .765, and dissatisfied with the home at .708). Effectively this tells us that the curved distribution of attitudes across the estate which has been described as the 'centre effect' can probably be accounted for in terms of the degree of overcrowding combined with overall household size - two factors which obviously require management and allocation solutions rather than architectural solutions.

In general, then, we find that the distribution of attitudes on the estate is strongly influenced by management and social factors. It is, however, difficult to extend this analysis to try to account for the desire to leave the dwelling and/or the estate. This is partly because the way in which the data has been gathered makes it difficult to distinguish clearly between the desire to leave the dwelling and the desire to leave the estate. Analysis suggests that the perception of overcrowding is a strong influence, but not the only one. In our view it would not be safe to try to draw conclusions on the basis of the evidence in the report.

But for those who are actually taking steps to leave the dwelling and estate by being on the transfer list there is a suggestive result.

Analysis of the location where there are households with children (i.e. omitting the three eastern locations with bedsitters and sheltered housing) shows that the proportions of residents on the transfer list is strongly correlated with the proportions who say they did not want to come to the estate in the first place. This also correlates with having had negative first feelings about the estate. This suggests that those who are actively seeking to leave the estate, as opposed to expressing the wish to leave, tend to be those who were unhappy about coming in the first place.

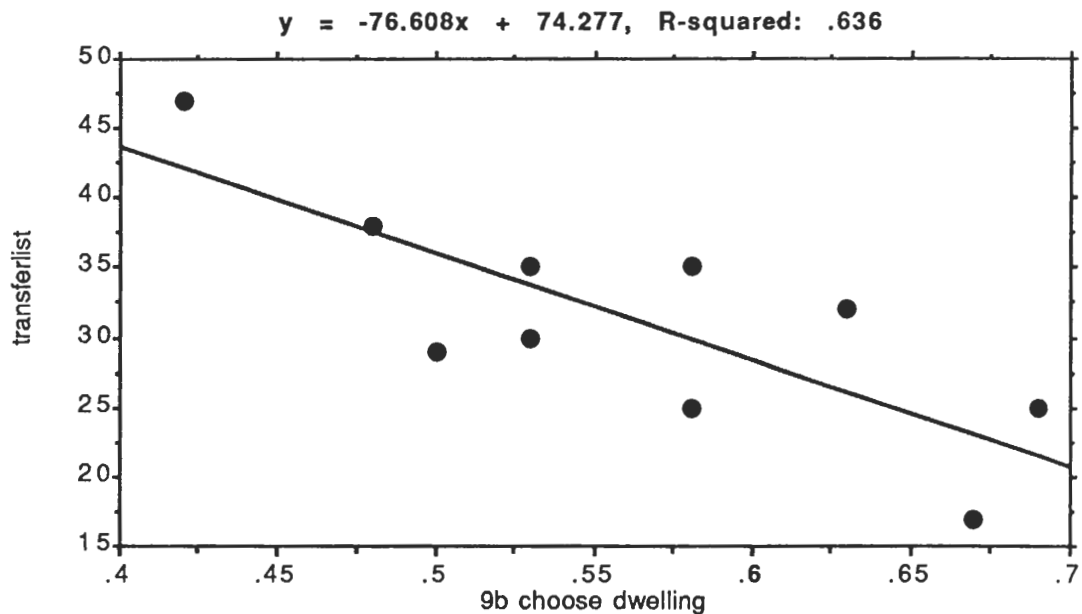


Figure 39. The correlation between the proportion of those on the transfer list and those who chose the dwelling in the first place for location groups with children across the estate. $r = -.797$ $p = .0057$

So what should be done

What then follows from this analysis? The Hunt Thompson Feasibility study proposes that (in addition to repairs, technical improvements and management changes, which are not the concern of this report) a number of changes should be made to the architecture and social composition of the estate with a view to changing its character. Architecturally, it is intended to *"Amend (the) estate layout so that it becomes safe and understandable, eliminating dangerous and confused areas, creating 'defensible' space wherever possible, (and) humanising its 'claustrophobic' and 'prison-like' appearance"* (Feasibility Study, 1.3). Socially, the aim is to *"Initiate... (an) alternative project, on community architecture principles, to provide supportive new housing for those tenants with the greatest levels of dissatisfaction and for*

whom Maiden Lane is the most inappropriate housing form - the large families in the centre of Phase I. Their former homes can then be transformed into a valuable asset, funding the alternative project....new tenants (or owner occupiers) move into the transformed central areas.....surrounding areas benefit, both visually and socially, due to the improved social balance.....".

It is not our business in this 'second opinion' on the architecture of Maiden Lane to comment on the social proposals. Even so, we must point out that although high levels of dissatisfaction with the estate and the dwelling are recorded for these 'central' locations, there is no evidence that the reason for this is some mass cultural rejection of modernist architecture. On the contrary, the evidence suggests that they result from the practical problems of overcrowding, a disadvantageous location and not having wanted to come to the estate in the first place. Levels of satisfaction with the appearance and layout of the dwelling in these locations are, for example, at about the same level (60-65%) as on other parts of the estate, and level of adverse (Alcatraz) comparisons is rather lower. No greater numbers in these locations have applied for transfer, and the population in these locations is in fact relatively stable. A good third have said they have no wish to leave either the dwelling or the estate, in spite of the problems in these locations.

It is also, of course, the case that the highest concentration of single parent families are in these locations, and one might think of these as the most vulnerable of groups, and the most in need of protection. In these circumstances, the proposals for a mass decant from these locations to an alternative 'community architecture project', to make way for new forms of tenure or owner occupiers, seems a singularly insensitive form of 'community architecture'. If some families genuinely wish to leave the estate and others are overcrowded, would not a programme which included some lateral conversion of houses to create a number of larger family units and a greater range of types on the estate be more apposite. In any case it is far from obvious that by the mass decant of single parent families one is somehow effecting a social improvement. If owner occupation is to gain a stake in Maiden Lane, then surely it should be by a gradual unobtrusive process, not by bureaucratic fiat. How, one must ask, would the existing families fare on the estate if they were the beneficiaries of a programme of architectural improvements?

On the matter of architectural improvement, it is common ground that there are problems with the layout of the estate. What is not clear is

that the changes proposed by Hunt Thompson will work. The essence of the Hunt Thompson strategy is to reverse the orientation of some of the dwellings in order to link back gardens wherever feasible, and to reduce the number of west-east routes across the estate. Through this they hope to reduce the vulnerability of dwellings, to eliminate 'muggers alleys', and to increase pedestrian movement by cutting out superfluous routes so making the layout "both safe and easily understandable". (Feasibility Study: Proposals 5.3 para. 1) The effect would be to change the estate layout from Figure 4 to Figure 40.

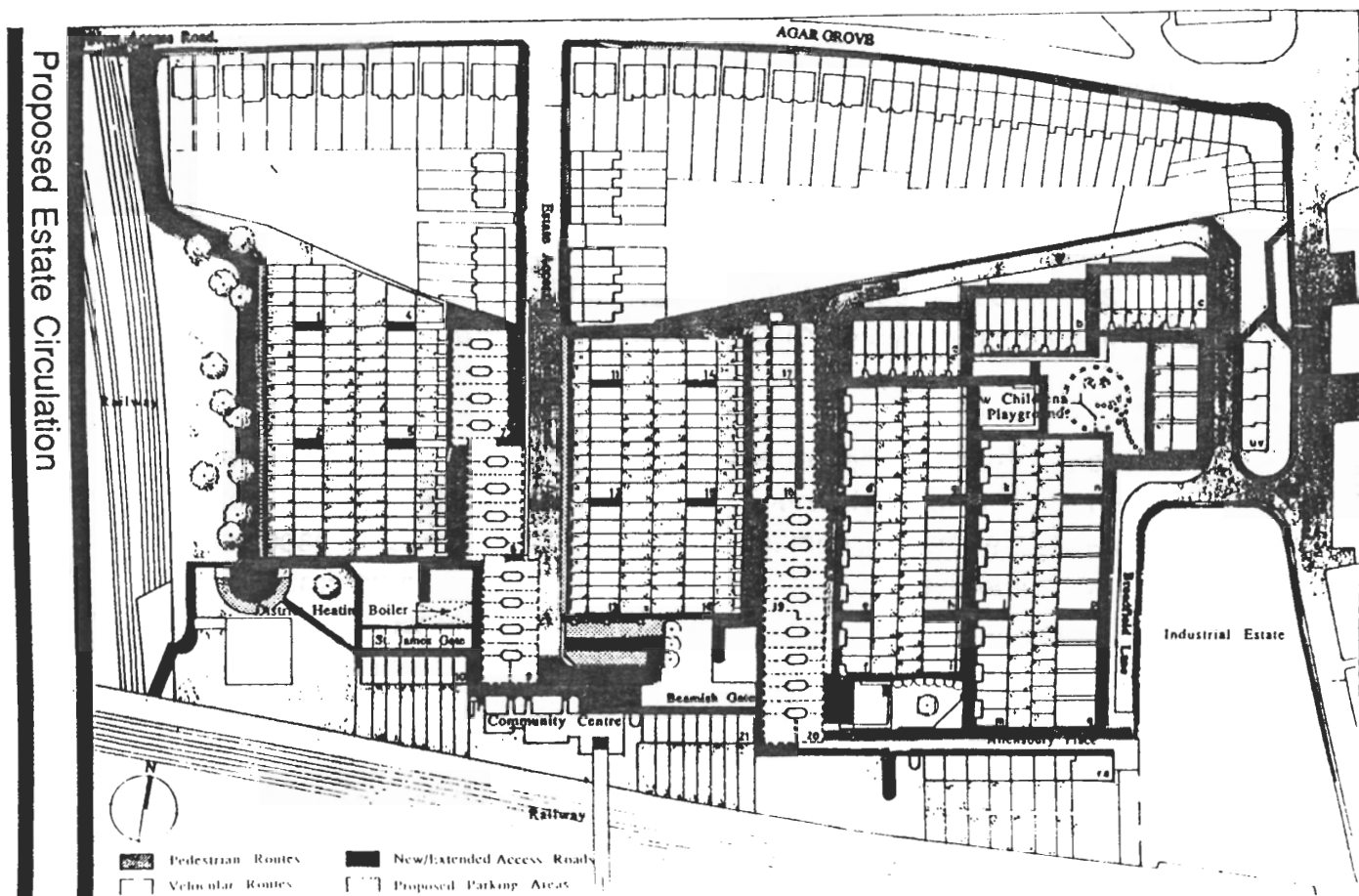


Figure 40. The changes proposed by Hunt Thompson Associates in the Feasibility Study report.

To understand the likely effects of these changes, we should look back again at Figures 6 and 7, the 'ten minute encounter maps' for moving adults and children. Looking first at adult movement (Figure 6) we can easily see how badly the whole area between St Paul's Crescent and the eastern edges of the estate suffers from lack of movement. Only the peripheral spaces and one of two key east-west routes have even the most modest levels of movement. The north-south spaces in the heart

movement. These are, of course, the spaces which were originally intended to link directly to Agar Grove. The total lack of movement in these spaces and all points south is an object lesson in layout design. How well a space is used for natural movement is determined by how it fits into the larger scale pattern, not by its local properties, or by the dwellings it gives access to. Figure 7, on the other hand, shows how strongly the presence of children is focussed on these north-south spaces.

Now if we look again at the revised layout proposed by Hunt Thompson (Figure 40), it is clear that the revisions will do nothing to change this. Simply blocking certain lines leaves the structural problem of the layout as it is, and will not generate any more natural movement. You cannot redistribute what is not there in the first place. Nor can it be said that the proposals would eliminate the spaces used preferentially by children, since it is these spaces that are to be left. What the Hunt Thompson proposals do, in effect, it to create an even stronger 'structural segregation' of the whole south and east part of the estate. So far as we can see, this can only exacerbate the problems of this part of the estate.

However, it is common ground that some remedial action needs to be taken on the estate layout, and we have already made it clear that there is no case for using this to achieve an aesthetic objective. The estate's layout problems are functional. The question is, what changes would produce the best results ?

The analyses we have made suggest that there are a number of critical problems with the layout, some obvious, but some less obvious because they have to do with the overall *structure* of the layout. The chief of these are :

- the general spatial problem is that there is no 'integration core' to the estate which relates the estate to its surrounding area. This has the effect of making certain large areas of the estate both open to uncontrolled access and isolated from natural movement, with consequent effects on fear of crime by residents and possibly on actual occurrences of crime, and on the unsupervised use of space by children. This is the problem that eventually comes out in the form of the 'depth' variable : depth means remoteness from natural movement at the edges of the estate;

- lines which are important in the internal structure of the layout (for example the line marked 2 in Figure 15) are sometimes narrow,

unrelated to dwelling entrances, pass through tunnel like, half underground spaces, and do not relate directly to the movement pattern into and out of the estate, all of which makes them unsuitable for natural movement;

- other key internal lines which do not pass underground (but which still lack dwelling entrances and are narrow) are baffled along their length by orthogonal barriers which are difficult to pass through - the chief of these is the line from York Way to Maiden Lane centre. Nevertheless, these lines provide important visual links which ought to be brought into a better relationship with the effective structure of space for natural movement.

- the line of movement east-west on the south side of the site which was so critical to the architects' original conception for overcoming the 'depth' problem (as we would call it) of the southern part of the site is baffled in three key places : at the eastern end (which as we will see below may not eventually matter), between Allensbury Place and St Paul's Crescent, and between St Paul's Crescent and St James Gate. The complexity introduced into the route structure as a result of these blocks seriously disrupts the layout, and isolates key areas from natural movement;

- there is a key potential meeting of important routes at the St Paul's Crescent entry to the site from east, west, north and south; this key focus is rendered ineffective by the way in which the change of level from the lower car level to the upper pedestrian level is handled. This baffles the two key lines of access from the east, splits the most important entry into the site into two, makes the route through from the west very difficult to use because its relation to the estate beyond St Paul's Crescent is disrupted, and fragments the relation of other north-south routes to the deeper parts of the estate.

It follows from our analysis of the social survey findings and the estate layout that any architectural changes to the estate should be aimed in the first instance at this set of problems. A stronger internal structure should be created, minimising difficult level changes, and with better relations to the surroundings. Since the estate's surroundings will soon include the new Kings Cross development, it is vital that any changes to the layout of the estate should take full account the precise form of that development. It will not be enough to 'create links'. Links must have route continuity both ways.

Since the masterplan for Kings Cross is not yet finalised, it is not

possible to offer fully worked out proposals for how the estate layout might be changed. But it is possible to outline in principle what ought to happen, and therefore what links to Kings Cross ought to exist, and how they should be exploited within Maiden Lane. Given route continuity with Kings Cross, we believe that it will not be as difficult to achieve a significantly improved layout in Maiden Lane as might be thought. The layout is far from irremediable, and could be made to work better with a series of carefully focused changes, aimed at improving the way the layout functions in the context of its surroundings.

First, we must consider the possible links to Kings Cross. The most obvious links would be two : a link from the south-west corner of the estate into the north-west corner of the Kings Cross site (this link is already in the plan, and plays an important role in the layout of the northern part of the site); and a second link farther east, either in the area of Broadfield Lane linking down to a re-opened Maiden Lane station, and from there into the site; or a similar link leading to the southern end of Maiden Lane to the east of Beamish Gate.

Whichever eastern link is chosen, the existence of two southern links makes possible - and indeed requires - returning to the original Benson & Forsyth conception of bringing natural movement into the southern parts of the estate - though not in the form they originally hoped of through movement across the southern part of the site, but of movement from the two southern entry points laterally across the site and into St Paul's Crescent. The effect of this would be to convert the main entry into the site (current adult movement rate : 1.6 pp100m/m), which is effectively a dead end at present, into a broadly splayed inverted Y with two important through-connections.

This structure will, however, only be viable if the links from St Paul's Crescent to the southern entry points are direct, easily intelligible and without sharp changes of level. In principle, the spaces are generous enough to permit this, but there are quite difficult levels problems to be solved which would require special study. If the estate is to be linked to Kings Cross, however, it will be vital to solve the problem of easy lateral movement in the southern areas.

Given this rather fundamental change to the layout, a number of associated remodelling exercises should be undertaken at specific points of the layout with a view to improving its overall structure. The most important of these is in St Pauls Crescent itself. The section of St Pauls Crescent between the entrance to the estate and the right turn short of the district heating boiler is divided into an upper pedestrian

level and a lower vehicle level. The upper level is only accessible from the lower level by a ramp at the northern end and a tortuous spiral staircase half way along. In effect, there is a wall as well as a level change splitting the space into two. This space is, however, a key potential meeting of five important routes from east, west, north and south. The powerful barrier resulting from the wall and level change mean that this part of St Paul's Crescent provides neither a focal space nor route continuity. On the contrary, it breaks routes very powerfully.

A great deal would be gained if this two level space were remodelled to operate as far as possible as a single space. One way might be to remove the retaining wall and replace by a continuous arrangement of steps and ramps which emphasises the continuity of the space across the two levels. The remodelled space would be both a focus of routes within the estate and an important entry space to the estate. As such, it would provide a far more powerful focal space than the estate current has.

Three significant improvements should then be made to the routes entering this focus from the east. First, the tortuous access from York Way to the Agar Grove section of Maiden Lane should be opened up (the planting has in any case become a gathering point for litter and garbage). Second, the central line which appears in plan to link York Way to Pauls Crescent is at present interrupted by a sudden change of level at Maiden Lane, negotiable only by a small spiral staircase. This should be remodelled to make it a smooth and continuous route. Third, the line running west-east between these two lines, which appears to link St Pauls Crescent to the small square with the children playground in the north east part of the estate, but which in fact is also broken by a level change and a spiral staircase at Maiden Lane, should be similarly remodelled to create a continuous and easy route.

These changes will have the effect of creating an internal structure to the estate that is related to the natural movement patterns in the surrounding area, as they will be when the Kings Cross site is developed. They will in effect create a core of natural movement both east-west and north-south, and covering all areas of the estate. Places like Linkwood Walk and Rosebank Walk will become more like quiet streets running between busier streets, rather than segregated spaces going from nowhere to nowhere. These changes could be made without massive expenditure and without altering the architectural character of the layout as it stands.

Reconsidering the Hunt Thompson layout proposals in the light of these

arguments, we fear that because they are not aimed at the overall structural problems of the layout, its isolation from the pattern of movement in the surrounding area, they will not overcome its social problems. They leave the structural problem of the layout more or less as it is, minus a few 'alleys'. Back-to-backing the houses is probably in itself harmless, but carried out in the way proposed it may worsen the overall layout problems by creating a more solid area of segregation in the south part of the east side of the estate, and by eliminating the potentially strong link directly from York Way to the heart of the estate.

In short, our belief is that the architectural solutions proposed in the Hunt Thompson report do not do justice to either the excellent body of social survey data in the report, or to the specific problems of the architecture and layout of the estate. They seem to owe more to current architectural fashion than to architectural analysis. The case against the architectural appearance is not made, and the case against the layout is not properly focused. There is therefore no case for committing resources to altering the aesthetic appearance of the estate. Nor is it clear that the proposals to 'back to back' the houses will in themselves improve the layout. Management reform, better technical services and a more precisely formulated programme of layout improvements, which do not change the architectural appearance of the estate, are what is called for.