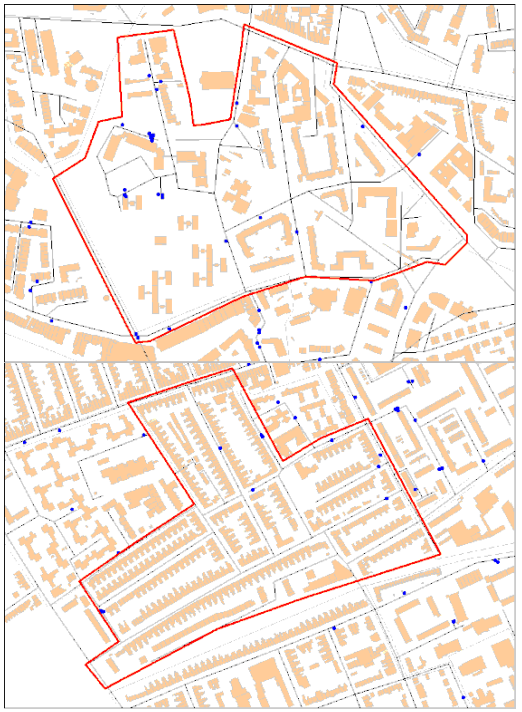
UrbanBuzz

Building sustainable communities



Socio-Environmental Disorder & Urban configuration (SEDUC)

Final report

April 08, 2009

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Executive Summary

Project SEDUC is a research project which was carried out by Space Syntax Limited as part of the Urban Buzz programme, in partnership with the London Boroughs of Tower Hamlets, Newham and Barking Dagenham. Aim of the project was to analyse the spatial distribution of ASB in two different London Boroughs. The key question was whether spatial factors such as street or estate layout, when controlling for socio-economic differences, can be shown to increase the levels of ASB occurrence and risk. This is a new approach depart from previous research which considers ASB predominantly from the perspective of the social science and from criminology.

Space Syntax research has developed a set of tools and techniques to bring to light spatial properties which influence patterns of activity in space. Our findings suggests that, controlling for social differences, patterns of ASB incidents can be correlated to generic properties of the environment that are captured by Space Syntax measures. We hereby find typical patterns of incidents in different types of spatial layouts.

Methodology
The study covers two data sets of ASB for the London Borough Tower Hamlets and Newham, each consisting of the geocoded incidents that were reported in 2006 and 2007. One line of analysis considers the overall incident distributions within each borough, in regards to spatial and socio-economic values, furthermore, we explore incident patterns on the level of the local residential neighbourhood.
We hereby distinguish between different neighbourhood morphologies according to structural and visual properties such as street patterns, building and dwelling type. We suggest that, for the purposes of this research, the neighbourhoods can be usefully distinguished to be either a 'street based' layout type or an 'estate' layout type. A street based layout is based on a grid pattern of streets, the building type is either an urban block or terraced housing. There are numerous building entrances directed towards the street - the street is constituted by the residential entrances. Different from this, the road network of the estate layout is broken up and tree-like with cul de sacs and circuits unrelated to dwelling entrances. The buildings are free-standing and do not define the space of the streets. Building entrances are not directed towards the continuous streets, but towards inner courtyards and semi-public areas.

Incident distribution on borough level
Incident density has been correlated against spatial road network properties (closeness, betweenness) residential layout type (street-based, estate layouts) and socio-economic properties (population density, economic index).
Tower Hamlets and Newham differ strongly in terms of their morphological as well as their socio-economic profile. The majority of Tower Hamlets' residential areas are post-war estate layouts, whereas in Newham, the traditional low-rise terrace predominates. In Tower Hamlets, the better-off part of the population tends to live in street-based layouts, whereas in Newham, the most deprived areas are the street based terraced layouts in the East of the borough.
In both boroughs however, overall correlations of ASB incident densities to spatial and socio-economic factors have been found to be not significant statistically. Incident distributions appear random - incidents cluster in some places, but not in others with similar characteristics, letting overall measures cancel each other out.

Incident patterns in residential neighbourhoods
Given contrasting morphological and socio-economic profiles of the boroughs yet it seems significant that in both boroughs, on the level of the residential neighbourhood, generic incident patterns show for different layout types crossbench socio-economic conditions:

- In **street based layouts**, ASB incidents tend to happen on the edges of the area, as if being 'pushed out' towards the roads running between the areas.

- In **estate layouts**, incidents tend to happen all across the area, often in the deep ends of the tree-like street system.

The distribution of ASB within a residential area can be captured by plotting, incident locations against integration R800. In urban residential areas, the high integrated spaces often coincide with the edges of the residential area - residential areas tend to constitute a background network of lower activity space surrounded by the higher accessible spaces constituting the foreground network of high activity that links centres at all scales (*). Thus, the higher integrated spaces tend to coincide with the edges of the area, and spaces are becoming less integrated the deeper one emerges into the area. For each area, we plot integration values of street segments, grouped by deciles of integration, against the sum of incidents happening on these segments. Comparing the plots of different area types, there is a tendency for incidents to happen

- in the integrated outer spaces in street based layouts,
- in the lower integrated spaces in the centre of the area in estate layouts,

persistently for different incident types throughout both London Boroughs, and across different socio-economic conditions.

(*) Hillier, B. and Iida, S. 2005. Network effects and psychological effects: A theory of urban movement. COSIT conference 2005

Conclusions
We suggest that these patterns can be explained in the light of the generic effect different layouts have on pedestrian movement and co-presence on the streets.
In street based layouts, that are permeable from the outside, there is a greater likelihood for through-movement which enhances the probability of co-presence of pedestrians - residents and non-residents alike - in that area. Furthermore, there is a strong protecting effect from building entrances; numerous entrances are intervisible to each other, thus each space of the layout is surveilled by these entrances together. In effect, ASB incidents are 'pushed out' through the combined impact from both co-presence of pedestrians on the streets and constitutedness of the street from residential entrances. Different from that, in estate layouts, where there is both less co-presence of pedestrians and little surveillance from building entrances, incidents emerge deeply into the residential area.
Local variations of incident patterns reinforce our findings, as they correspond to variations in the urban structure. Places where either constitutedness from residential buildings or pedestrian co-presence is limited, seem to become 'candidate' spaces for ASB. For example, we find accumulations of incidents in unconstituted back streets of high streets, or, in street layouts, in places where either the constitution pattern breaks down or the street pattern is broken up. These observations emphasize that it is the combined effectiveness of spatial factors, and the syntax of the spatial layout, rather than isolated morphological indicators, that impact on the spatial distribution of ASB.

Tower Hamlets:
'Hotspots' analysis

Newham:
'Hotspots' analysis

Background

Sustainable communities are safe, perceived as safe (low levels of fear) and are attractive (low levels of disorder). Anti-social behaviour (ASB) and physical disorder can thus be viewed as barometers of sustainability. Areas of high ASB usually have high levels of deprivation and these same areas are associated with higher levels of environmental disorder such as dumped cars (stolen), rubbish and damaged street furniture. Together these attract crime, promote insecurity and fear of crime among residents, and erode community cohesion.

Local Authority data sets such as 'FLARE' record all aspects of reported ASB and physical disorder in the environment. Analysis of such data alongside the configuration of the built environment (space syntax) informs thinking about effective interventions that feed into physical and social infrastructure planning, and community safety.

Project SEDUC is supported by HEFCE and DTI through the UrbanBuzz programme to work initially, in partnership, with the London Boroughs of Tower Hamlets, Newham and Barking & Dagenham. The project has four broad aims:

- to put in place automated methods of data preparation and geocoding of 'FLARE'-type data sets ready for analysis;
- to promote the generic use of space syntax software in planning and specifically in the analysis of ASB and physical disorder against metrics of the configuration of street networks
- to use these analyses to inform appropriate responses for minimising recurrence of ASB, design against crime and fostering community cohesion – to be brought together in a practice guide;
- to deliver the necessary knowledge transfer through capacity building and skills enhancement in the Boroughs in order to make these sustainable activities so that Local Authorities can continue to respond to the dynamics of ASB and physical disorder.

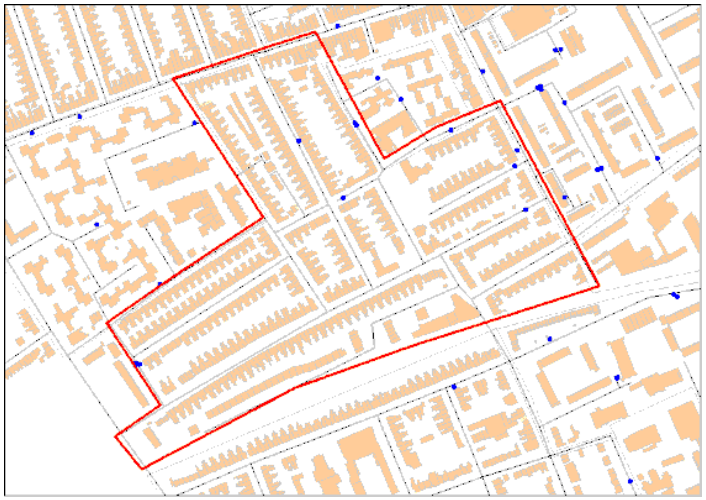
Local Authorities are already responding to the challenges of ASB. Our input to partnership working is designed to achieve a step-change in these activities.

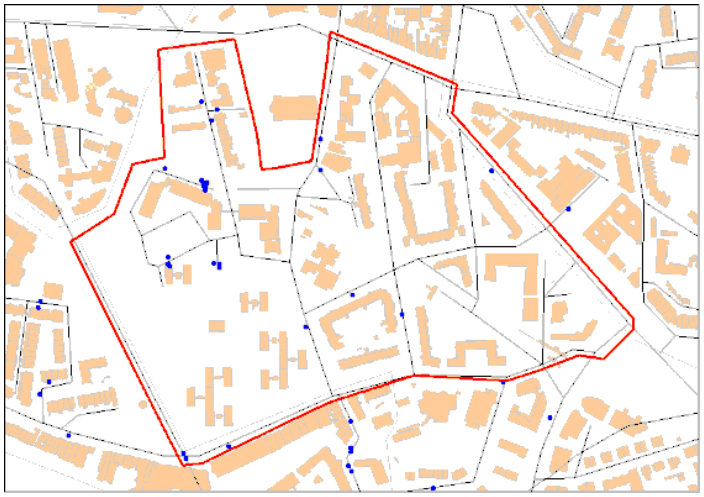
Project SEDUC is primarily a series of knowledge transfer activities that also aims to deliver useful, well-founded tools and products to Local Authorities that will underscore their ability to develop Sustainable communities.

Key Questions

Controlling for social differences, are spatial factors, if at all, increasing the level of ASB occurrence and risk?

What are these spatial factors?





‘Street based layout’:

- The street layout is a grid with few and shallow cul de sacs
- The space of the street is well defined by building frontages
- Streets are constituted by building entrances
- There exists a well-defined circulation space for both cars and pedestrians

‘Estate layout’:

- The street layout is tree-like with deep cul de sacs
- The streets are not defined by building frontages
- The layout is over-permeable; there exist different routes for pedestrians and cars
- Building entrances are not directed towards the street space, but often towards dedicated semi-public pedestrian space

In Space Syntax research, the city is in the first place considered as a collection of buildings linked by a network of spaces – the street network. This point of view emphasises the fact that in cities, the **spatial configuration of the road network is a primary determinant of movement flow**. The relation between spatial structures and movement is a primary generic factor for the self-organisation of the city. Movement shapes the city, creating and reinforcing a **foreground network of linked centres** set into a **background network of primarily residential spaces**.

Space Syntax research has developed a set of tools and techniques to bring to light spatial properties which influence the distribution of activity in space. The system of streets and spaces is represented as a graph of street segments between intersections and direction changes of streets. The two key measures of the graph, associated to the individual segments, are

•'**Through- movement**' or '**Choice', i.e. 'Betweenness'** – the movement potential of a street, the likelihood of a street segment to be chosen for a trip, and

•'**To-movement' or 'Integration'** – the accessibility (closeness) of a street segment within the network.

Accessibility and movement potential shape **activity patterns** of the road network. These activity patterns are closely linked to **patterns of land use**, and they capture the likelihood of **co-presence** of people on the streets.

The key question of this research is whether spatial factors of urban environments are increasing the level of ASB occurrence and risk. Movement, land use and high and low activity patterns are all thought to be linked in some way to crime. In earlier Space Syntax research on crime, two aspects of movement and land use in order to prevent crime have been highlighted: the **co-presence of pedestrians on the street** on the one hand, and **the 'constitutedness' of a street : a street 'protected' through residential entrances** towards the street.

We suggest that likewise the patterns of occurrence of ASB incidents can usefully be explained in the light of **surveillance** (from building entrances) and **co-presence** (of pedestrians), **with ASB withdrawing from both**. ASB tends to go away from the busy public realm, such as high streets, into the back and side streets; and also tends to stay away from well-constituted residential streets.

Considering the generic effect of layout on both surveillance and movement potential (*), we suggest that for the purpose of this research, we can usefully distinguish between two types of urban residential layout:

The street-based layout

- The street layout is a grid with few and shallow cul de sacs
- The space of the street is well defined by building frontages
- Streets are constituted by building entrances
- There exists a well-defined circulation space for both cars and pedestrians

The estate layout

- The street layout is tree-like with deep cul de sacs
- The streets are not defined by building frontages
- The layout is over-permeable; there exist different routes for pedestrians and cars
- Building entrances are not directed towards the street space, but often towards dedicated semi-public pedestrian space

(*) Hillier, B. 1996. Space is the Machine. Cambridge University Press.

Global patterns of ASB seem often random. Incidents tend to cluster around busy streets in some places, but not in others. On the other hand, some incident types seem to withdraw into the residential backdrop, but not all residential areas are affected equally. There is no significant correlation to socio-economic conditions, neither on COA level nor on residential neighbourhood level.

However, if we look at incident patterns not as global distributions but on the level of the individual neighbourhood, we detect **generic patterns of incidents for different types of structures:**
In street based layouts, incidents tend to happen on the edges of the area, whereas in estate layout, incidents tend happen all across the area, often in the centre of the area, and in the deep ends of the tree structure.
These patterns hold across incident types, and also can be found in both London boroughs. **This is significant, as socio-economic conditions in the two boroughs are almost reverse**: in Tower Hamlets, for example, street based layouts are usually socio-economically better off than Estate layouts, which is not the case in Newham**. We find the same types of incident patterns in certain types of areas regardless of their socio-economic conditions.**

'Street based' layouts

In dense residential street based layouts which are well-constituted by terraces, ASB incidents tend to happen on the edges of these areas, as if being 'pushed out' towards the main roads.

The distribution of ASB within a residential area can be captured by plotting incident locations against integration R800. In urban residential areas, the high integrated spaces often coincide with the edges of the residential area - residential areas tend to constitute a background network of lower activity space surrounded by the higher accessible spaces constituting the foreground network of high activity. Thus, within a residential area the more accessible spaces tend to coincide with the edges of the area, and spaces are becoming less integrated the deeper one emerges into the area.
Plots of incident numbers against Integration of the street segment where the incident took place indicate that **in street based layouts, incidents tend to happen on the higher accessible outer spaces of the area**.

'Estate' layouts

In 'Estate' layouts with tree-like organizations of streets, fragmented street structures and freely standing buildings which do not constitute the streets, incidents are often scattered all over the neighbourhood.

In a tree-shaped road structure, the inner deep ends are usually also the least integrated parts of the structure. Plots of incident numbers against Integration of the street segment where the incident took place indicate that **in Estate layouts, incidents tend to happen on the less accessible spaces in the centre of the area.**

High streets

ASB incidents often do not happen on the high street itself, but tend to withdraw more or less deeply into the surrounding areas. If high streets are surrounded by dense and well constituted areas, incidents happen very next to the high street, such as being 'pushed back' towards the high street. If a high street has poorly constituted back streets, incidents tend to withdraw from the high street and emerge into these back spaces.

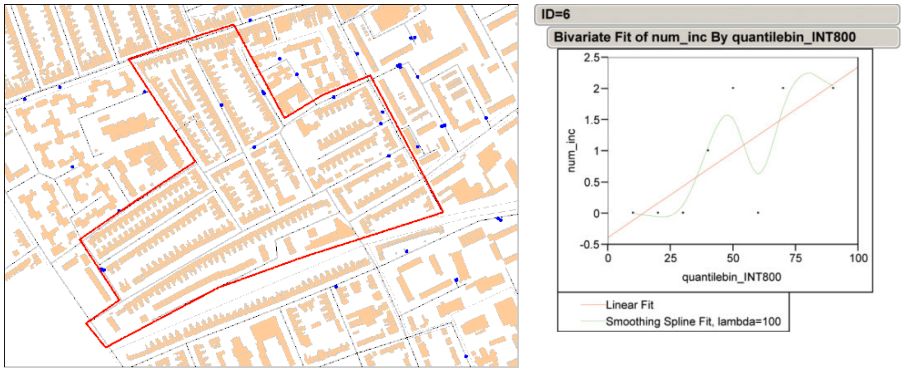


Fig 1 - Street-based layout: Violence incidents. Incidents tend to happen on the edges of the area.

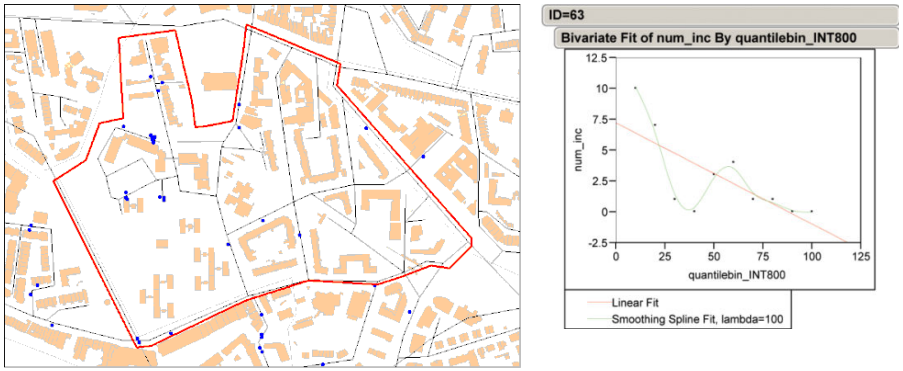


Fig 2 – Estate layout: Violence incidents. Incidents are scattered all over the area, and cluster in the deep ends of the structure.

Fig 3: High Streets in Newham: (Romford Road crossing Upton Lane (left) and Romford Road crossing High Street Newham (right)
Drug incidents near the high street and a school. Incidents, although clustering around the high street, tend to withdraw from the public realm, and emerge into the side streets. Especially poorly constituted back streets are affected (right).

There are less incidents in the terraces-lined residential streets. This suggests that incidents both go away from both the public space that is surveilled by co-present pedestrians, and the residential areas which are well constituted by dwellings.

Cumulative plots of incidents against spatial integration R800

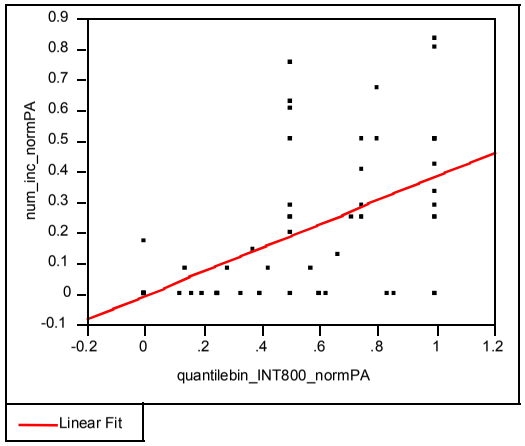
Left: Number of incidents per spatial decile per area in street based areas (left) and in estate layouts (right).

For each area, decile bins as well as incident numbers have been normalised between 0 and 1.

In street based layouts, incidents are more often located in the more integrated spaces. The opposite is the case for estate layouts.

Street based layouts

Bivariate Fit of Incident numbers (normalised per area between 0 and 1) By Deciles Integration (normalised per area between 0 and 1)



Linear Fit

num_inc_normPA = -0.002745 + 0.3903833 quantilebin_INT800_normPA

Summary of Fit

RSquare	0.331688
RSquare Adj	0.32055
Root Mean Square Error	0.198238
Mean of Response	0.193548
Observations (or Sum Wgts)	62

Analysis of Variance

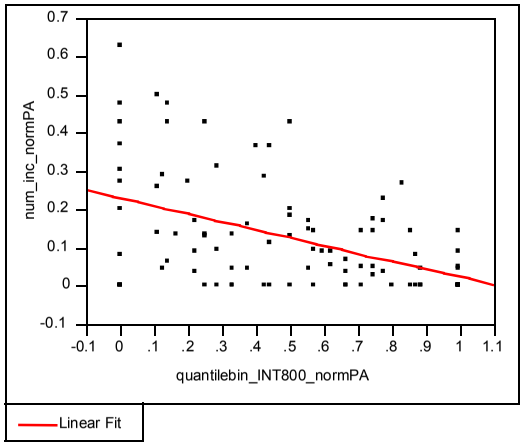
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	1.1702429	1.17024	29.7784
Error	60	2.3578991	0.03930	Prob > F
C. Total	61	3.5281420		<.0001

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	-0.002745	0.043906	-0.06	0.9504
quantilebin_INT800_normPA	0.3903833	0.071539	5.46	<.0001

Estate layouts

Bivariate Fit of Incident numbers (normalised per area between 0 and 1) By Deciles Integration (normalised per area between 0 and 1)



Linear Fit

num_inc_normPA = 0.2313274 - 0.2058552 quantilebin_INT800_normPA

Summary of Fit

RSquare	0.217417
RSquare Adj	0.208818
Root Mean Square Error	0.130088
Mean of Response	0.129032
Observations (or Sum Wgts)	93

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	0.4278415	0.427842	25.2817
Error	91	1.5399931	0.016923	Prob > F
C. Total	92	1.9678347		<.0001

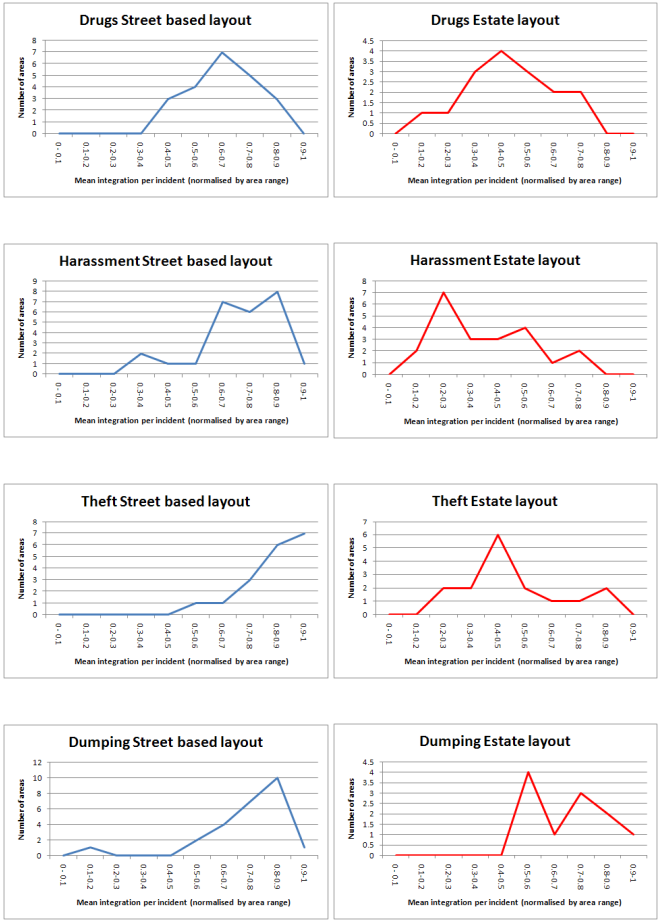
Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	0.2313274	0.024411	9.48	<.0001
quantilebin_INT800_normPA	-0.205855	0.040941	-5.03	<.0001

1 Overview Findings

ID	Area type	Drugs	Harassment	Theft	Dumping	Area type	Drugs	Harassment	Theft	Dumping
1						ES			90.625	
2						ST				88.5714286
3						ES		37.5		86.25
6						ES	47.2222222			
7	ST	48.4848485	60.3174603		82.1428571					
8	ST	76.3888889	80.5555556	87.037037	76.9230769					
9	ST	59.6153846	81.8181818	100	82.8125					
10	ST	48.3333333	77.7777778	78.5714286	80.3030303					
11	ST	69.7132616	77.7777778	74.6031746	79.3650794					
13	ST	73.3333333	80	85	84.4444444					
14	ST	83.9285714	91.8478261	86.3636364	75					
15	ST	72.2222222	69.7916667	88.0952381	73.3333333					
16						ES	40.4761905	11.4285714	52.3809524	
17						ES		42.962963	22.2222222	
18						ES	34.5679012	20	44.4444444	
19						ES	53.125	53.5714286	47.9166667	58.3333333
20						ES		53.7037037	85.1851852	
21						ES	38.0116959	43.5897436	48.4126984	
24						ES	48.6111111	56.0683761	48.7455197	52.020202
25						ES	73.75	75	31.25	75
27	ST	59.6153846	63.0952381	94.047619	88.8888889					
28	ST	68.5185185	86.6666667		94.4444444					
29	ST	71.6981132	81.1428571	91.4285714	81.3186813					
30	ST	74.789916	82.3529412	100	70.7142857					
31	ST	66.6666667	37.5		66.6666667					
33	ST	64.1025641	63.5802469	66.6666667	64.6090535					
34	ST	67.1875	58.3333333		53.4090909					
35	ST	56.8181818	76.0416667	91.6666667	88.3928571					
36	ST	82.2222222	75.5555556	96.2962963						
37	ST	82.2368421	80.3571429	97.2222222	87.2368421					
38						ES	56.4102564	42.4242424		62.8205128
39	ST				55.1724138					
40	ST		48.1481481		77.7777778					
41						ES	25	26.5625	58.3333333	
42						ES			22.2222222	
43						ES	32.9545455	36.71875	39.5833333	87.5
46	ST	67.6691729	72.8571429	77.1428571	74.2857143					
47						ES		26.5625		
48	ST	45.5357143	77.6785714	86.7647059	65					
49	ST		60							
50						ES	55.5555556	69.4444444	72.7272727	75.2688172
51						ES	74.0740741	29.6296296		75
51	ST		80		81.4285714					
53						ES	14.8148148	11.6666667		
56						ES		22.0779221		55.1020408
57	ST	50	60	80						
58	ST		33.3333333	58.3333333						
60						ES	62.5	33.75		
61	ST	64.9350649	66.0714286		65.3061224					
63						ES	40.3846154	29.6875	91.6666667	
64						ES		58.3333333		
65						ES				90.4761905
66						ES		71	48	
67						ES	62.5	23.5294118	41.6666667	50
Average		66.0916229	70.1000199	85.5133029	76.0424231		47.4973739	39.7823494	52.8363865	71.3618771

Mean Integration R800 for ASB incidents per area in street based layouts (left) and Estate layouts (right)



Number of areas per mean incident Integration R800 in street based layouts (left) and Estate layouts (right)

Mean integration R800 for ASB incidents per area

Displayed are mean values for all 67 areas in Newham. Street based layouts are in the left column, estate layouts in the right column. Green shades indicate a figure above, red below the average integration value. Estate layouts tend to have a lower than average integration value.

Number of areas per mean incident integration R800

Left: street based layouts, right: Estate layouts. For street based layouts, most areas have high mean values of integration for spaces where ASB occurs. Estate layout areas more often have low mean incident integration.

2 Tower Hamlets

Contents

2.1 Tower Hamlets Introduction

The data set

The data set of ASB incidents for Tower Hamlets consists of 3.989 reported incidents between 2005 and 2007. Each incident has attached information about date, time and nature of the incident.

There are in total 17 different categories of ASB in the data set, however, we have been focusing on the five categories that have the highest number of incidents:

Motor-Vehicle Crime	199
Property Damage	226
Drugs	577
Dumping	213
Violence	1059

Each incident data point has been associated to the nearest street segment of its occurrence.

The spatial model

is a simplified segmented ITN road centre line map (M25). The spatial model is processed in Depthmap (written by Alasdair Turner) for Accessibility (integration) and Betweenness (Movement potential - Choice). Throughout this report, we will use the measures **global choice** and **integration radius 800 metric**.

COA and OS MasterMap Topography layer

We use Census output area data (COA) as data source for population density and socio-economic conditions.

OS MasterMap buildings layer can be used to identify buildings types. We use buildings types information in combination with street layout types to identify residential neighbourhoods, as described in section 1.

ASB incidents have been joined to both COAs and residential neighbourhoods.

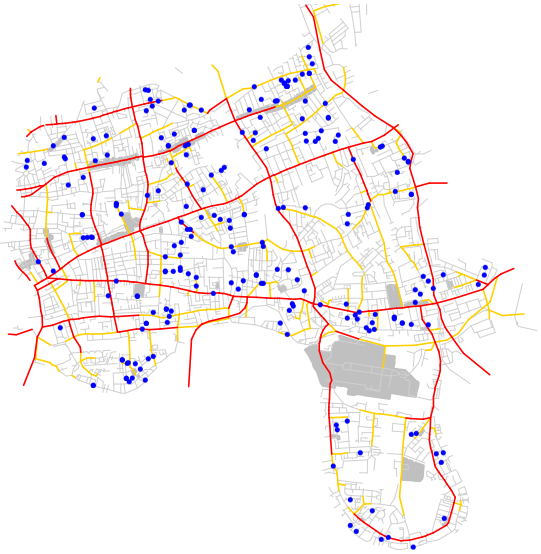
Methodology

In this section, we investigate global incident patterns for Tower Hamlets

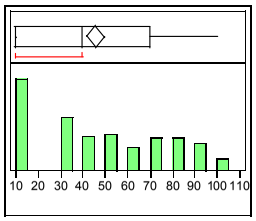
- in relation to spatial measures of the road network
- on Census output area level, in correlation to population density and socio-economic conditions
- on the level of residential areas, in correlation to area type, population density and socio-economic conditions

2.2 Tower Hamlets Road Network Analysis

Property Damage

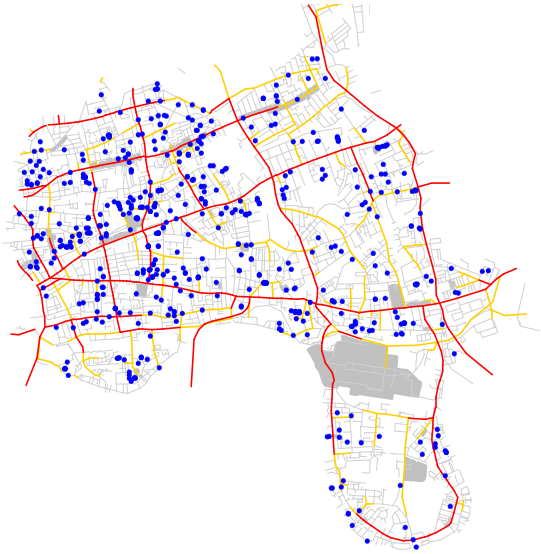


Distributions of incidents over Choice RN deciles of the road network

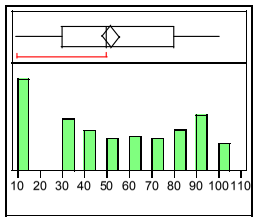


Mean	45.628141
Std Dev	28.823433
Std Err Mean	2.043239
upper 95% Mean	49.657444
lower 95% Mean	41.598838
N	199

Drugs incidents

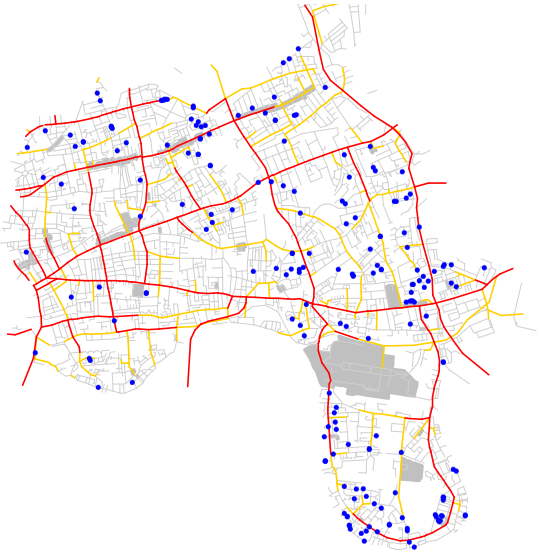


Distributions of incidents over Choice RN deciles of the road network

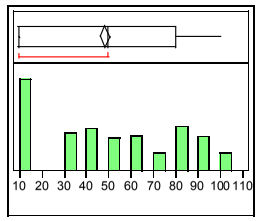


Mean	51.725664
Std Dev	30.668622
Std Err Mean	2.0400464
upper 95% Mean	55.745705
lower 95% Mean	47.705623
N	226

Vehicle Crime



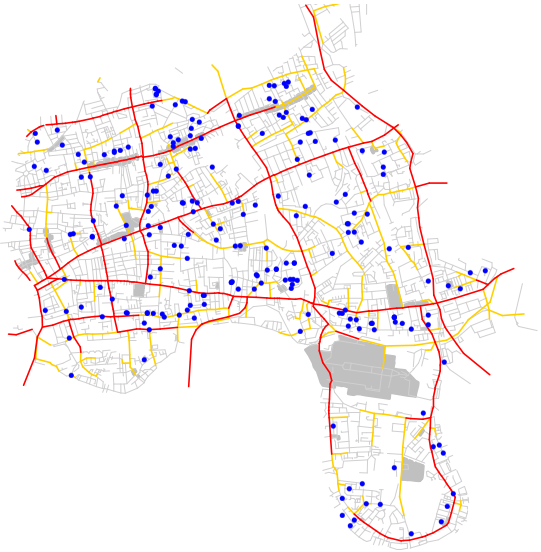
Distributions of incidents over Choice RN deciles of the road network



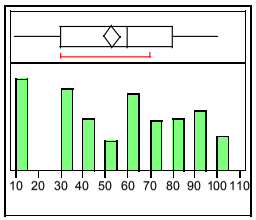
Mean	48.561525
Std Dev	29.875496
Std Err Mean	1.2437332
upper 95% Mean	51.00433
lower 95% Mean	46.11872
N	577

2.2 Tower Hamlets Road Network Analysis

Dumping

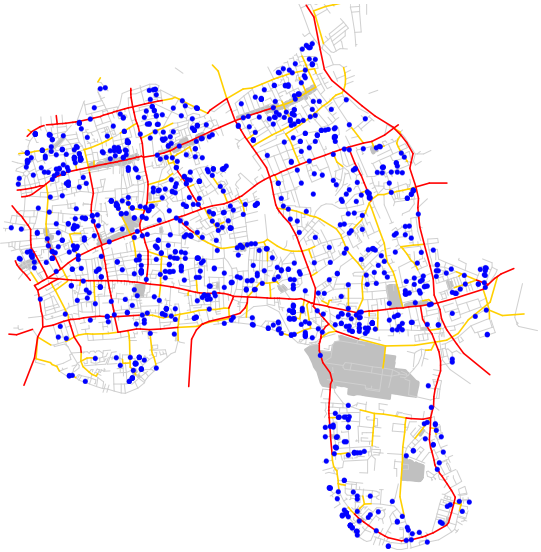


Distributions of incidents over Choice RN deciles of the road network

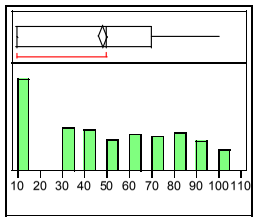


Mean	53.051643
Std Dev	28.806154
Std Err Mean	1.9737651
upper 95% Mean	56.942363
lower 95% Mean	49.160924
N	213

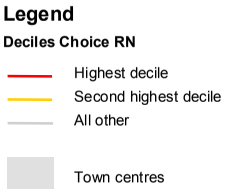
Violence



Distributions of incidents over Choice RN deciles of the road network



Mean	48.375826
Std Dev	29.459633
Std Err Mean	0.9052725
upper 95% Mean	50.15216
lower 95% Mean	46.599493
N	1059



Incident distribution on Betweenness

These pages shows the distribution of incidents over deciles of global through-movement (Choice RN): Firstly, we analyse the road network to obtain values of choice for each segment. Then, we calculate the deciles for the range of the choice values, and assign each street segment to a deciles bin.

Incident are plotted on the road network, showing the 20% segments with the greatest movement potential (the 2 upper deciles of choice).

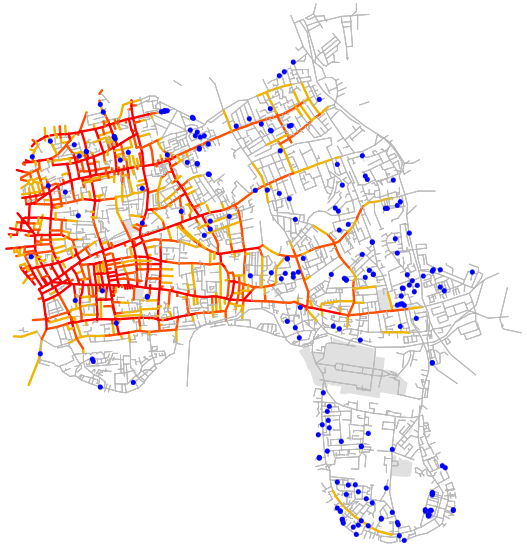
Global incident patterns often seem rather random. Different incident types show different more or less visible 'hotspots'. Some incident types such as **Drug** incidents tend to cluster around high streets in some areas, but not in others. Other incident types such as **Property damage** seem to take place in residential areas, but some areas are more affected than others.

Overall, there are very few incidents reported in non-residential parts of the boroughs. This might indicate people are more bothered by signs of ASB in their own areas than in public spaces – the data set might be highly biased!

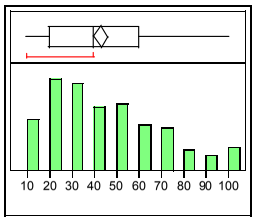
The statistics show incident distributions over choice deciles. Incidents seem to be rather evenly distributed over the range of values. **Note that the lowest decile bin actually contains the number of elements that should distribute over the lowest and second lowest bi**n – the spatial network contains very many segments with Choice zero. The 'peaking' lowest bin is therefore misleading.

2.2 Tower Hamlets Road Network Analysis

Property Damage

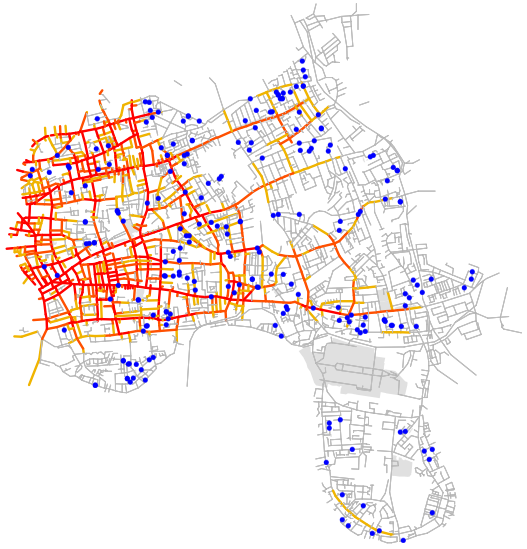


Distributions of incidents over IntegrationR800m deciles of the road network

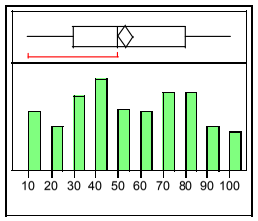


Mean	43.165829
Std Dev	24.526375
Std Err Mean	1.7386286
upper 95% Mean	46.594435
lower 95% Mean	39.737223
N	199

Drugs incidents

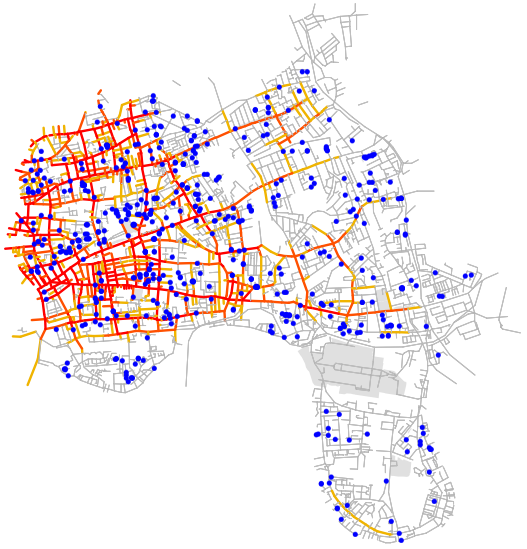


Distributions of incidents over IntegrationR800m deciles of the road network

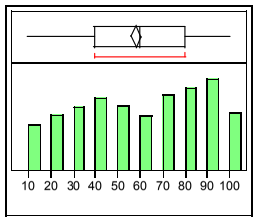


Mean	53.362832
Std Dev	26.553447
Std Err Mean	1.766309
upper 95% Mean	56.843456
lower 95% Mean	49.882208
N	226

Vehicle Crime



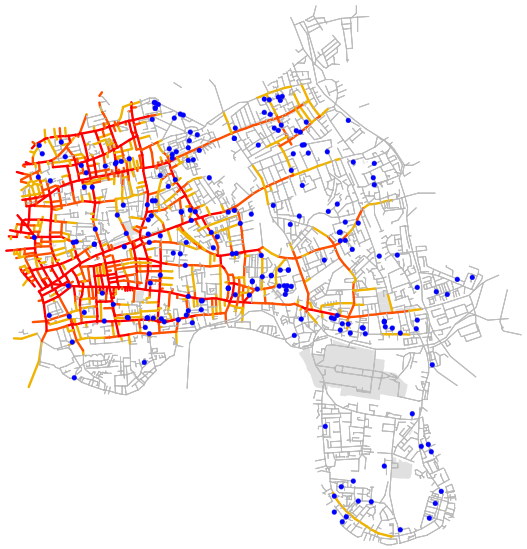
Distributions of incidents over IntegrationR800m deciles of the road network



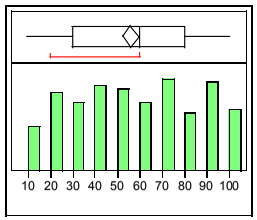
Mean	58.457539
Std Dev	27.736584
Std Err Mean	1.1546891
upper 95% Mean	60.725453
lower 95% Mean	56.189625
N	577

2.2 Tower Hamlets Road Network Analysis

Dumping

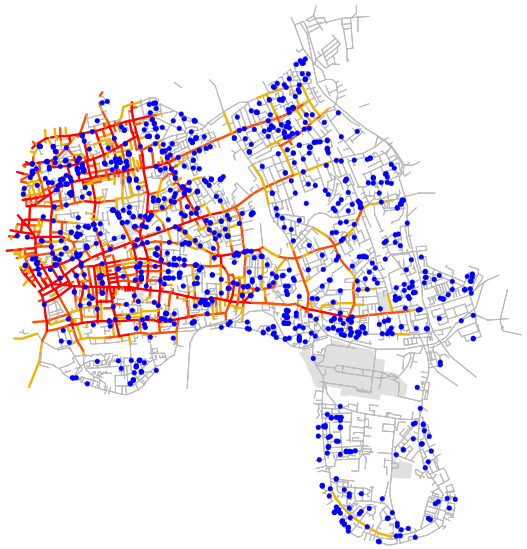


Distributions of incidents over IntegrationR800m deciles of the road network

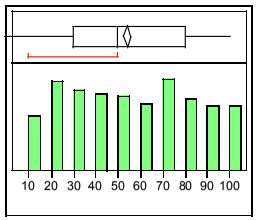


Mean	56.244131
Std Dev	27.334002
Std Err Mean	1.872895
upper 95% Mean	59.936014
lower 95% Mean	52.552249
N	213

Violence



Distributions of incidents over IntegrationR800m deciles of the road network



Mean	54.34372
Std Dev	27.79242
Std Err Mean	0.8540403
upper 95% Mean	56.019526
lower 95% Mean	52.667915
N	1059

Legend

Deciles Integration R800m

- Highest decile
- Second highest decile
- All other
- Town centres

Global incident distribution

These pages shows the distribution of incidents over deciles of local accessibility (Integration R800m): Again, we calculate the deciles for the range of the integration values, and assign each street segment to a deciles bin.

Incident are plotted on the road network, showing the 20% segments with the greatest accessibility (the 2 upper deciles of integration). Note that, although being a local measure, accessibility is biased towards the centre of London.

The statistics show incident distributions over integration. Incident distribution is again rather even across the values range; only **Property damage** shows a slight tendency towards less accessible spaces.

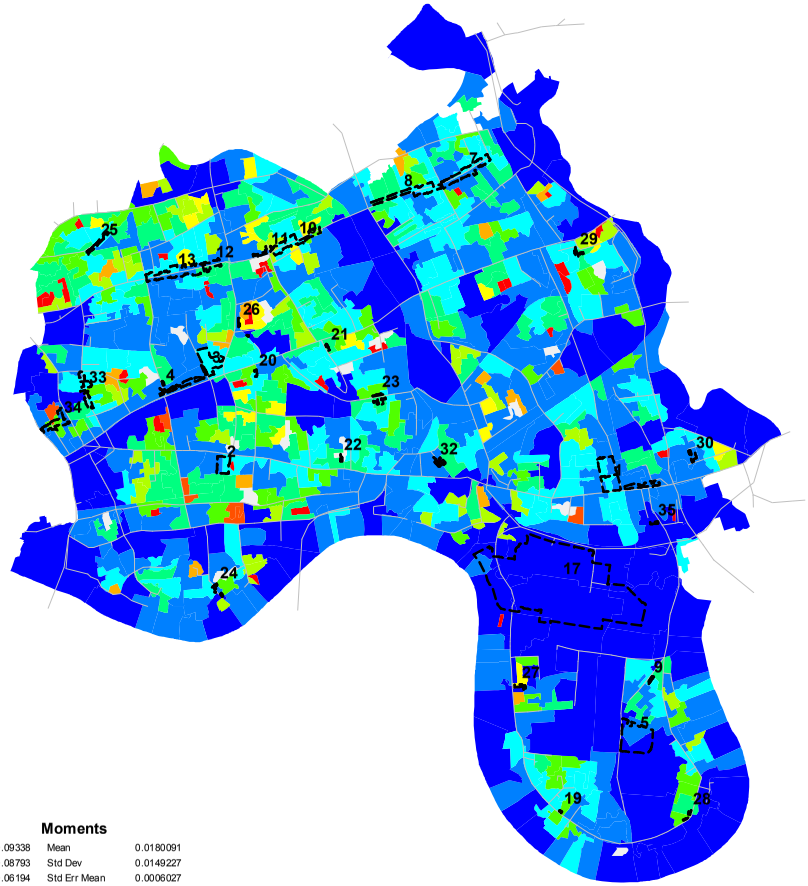
2.3 Tower Hamlets COA analysis

Centres

ID	Name	Classification
1	Chrisp Street	District
2	Watney Market	District
3	Whitechapel	District
4	Whitechapel	District
5	Isle of Dogs	District
6	Chrisp Street	District
7	Roman Road East	District
8	Roman Road East	District
9	Castalia Square, St Johns Estate	Neighbourhood
10	Roman Road West	District
11	Roman Road West	District
12	Bethnal Green	District
13	Bethnal Green	District
17	Isle of Dogs	Major
19	Westferry Road	Neighbourhood
20	O'Leary Square	Neighbourhood
21	Whitehorse Lane	Neighbourhood
22	Westport Street	Neighbourhood
23	Ben Johnson Road	Neighbourhood
24	Wapping Lane	Neighbourhood
25	Columbia Road	Neighbourhood
26	Cleveland Way/Cambridge Heath Road	Neighbourhood
27	Barkantine Estate	Neighbourhood
28	Manchester Road	Neighbourhood
29	Stroudley Walk	Neighbourhood
30	Aberfeldy Street	Neighbourhood
32	Salmon Lane	Neighbourhood
33	Brick Lane	Neighbourhood
34	Wentworth Street	Caz Frontage
35	Poplar High Street	Neighbourhood

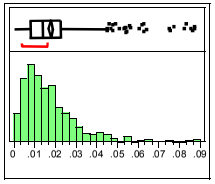
Population density

0.05	to	1	(29)
0.045	to	0.05	(7)
0.035	to	0.04	(15)
0.03	to	0.035	(22)
0.025	to	0.03	(44)
0.02	to	0.025	(63)
0.015	to	0.02	(101)
0.01	to	0.015	(117)
0.005	to	0.01	(138)
0	to	0.005	(70)
all others			(17)



Distributions

Population density



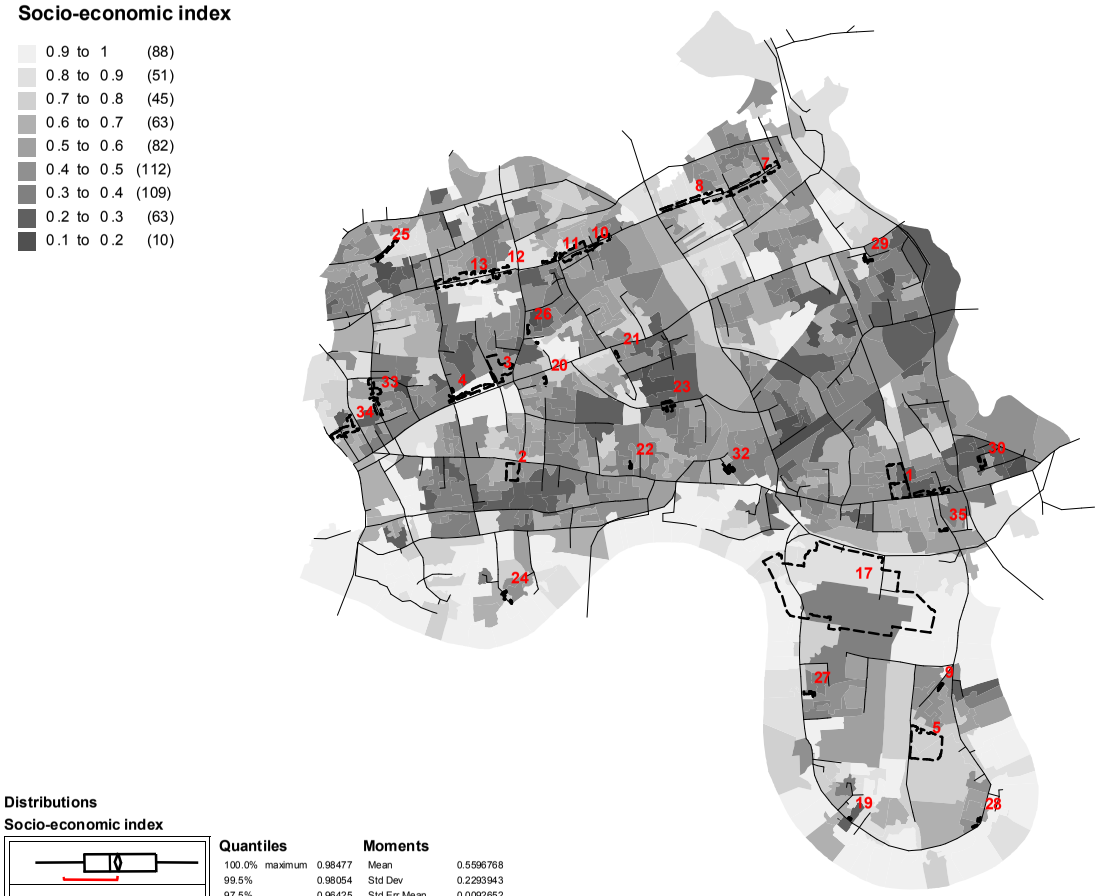
Quantiles

100.0%	maximum	0.09338
99.5%		0.08793
97.5%		0.06194
90.0%		0.03578
75.0%	quartile	0.02294
50.0%	median	0.01423
25.0%	quartile	0.00813
10.0%		0.00459
2.5%		0.00208
0.5%		0.00092
0.0%	minimum	0.00076

Moments

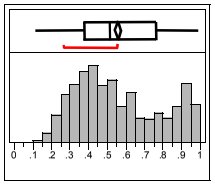
Mean	0.0180091
Std Dev	0.0149227
Std Err Mean	0.0006027
upper 95% Mean	0.0191927
lower 95% Mean	0.0168254
N	613

2.3 Tower Hamlets COA analysis



Distributions

Socio-economic index



Quantiles			Moments	
100.0%	maximum	0.98477	Mean	0.5596768
99.5%		0.98054	Std Dev	0.2293943
97.5%		0.96425	Std Err Mean	0.0092652
90.0%		0.92403	upper 95% Mean	0.5778721
75.0%	quartile	0.76293	lower 95% Mean	0.5414814
50.0%	median	0.51613	N	613
25.0%	quartile	0.37643		
10.0%		0.28349		
2.5%		0.21186		
0.5%		0.15517		
0.0%	minimum	0.12030		

Population density and socio-economic conditions

Maps show thematic maps of population density and socio-economic conditions for Census output areas (COAs).

Population density is calculated:

$$\frac{residents}{area}$$

The socio-economic index is calculated:

$$\frac{a+b+c}{a+b+c+h+i+j}$$

a KS14A0002: People aged 16 - 74: Large employers and higher managerial occupations
b KS14A0003: People aged 16 - 74: Higher professional occupations
c KS14A0004: People aged 16 - 74: Lower managerial and professional occupations
h KS14A0009: People aged 16 - 74: Routine occupations
i KS14A0010: People aged 16 - 74: Never worked
j KS14A0011: People aged 16 - 74: Long-term unemployed

Both population density and socio-economic index are slightly higher than in Newham (compare section 3).
The more dense areas are in the North and West of the borough, with some COAs outstanding due to high rise residential buildings.
Socio-economic conditions vary considerably across the borough, with better off areas along the waterfront, on the Isle of Dogs and in the North-east of the borough between Mile End Park and Victoria Park. The distribution of socio-economic index shows a double-peaked shape, with the higher peak representing the relatively high number of better-off areas along the waterfront and towards Victoria Park.

2.3 Tower Hamlets COA analysis

Incident distribution vs. population density

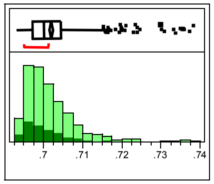
Distributions of Census Output areas (COAs) according to population density. Left column shows all COAs, with COAs that have incidents in darker shade. Right column shows the distribution of COAs with incidents only.

Across incident types, mean and median values for population density of all COAs and COAs with incidents are very similar. There is no significant tendency for incidents towards higher or lower population density – **the distribution of COAs with incidents is proportional to the total distribution.**

Vehicle Crime

Distributions

log population density (all COAs)



Quantiles

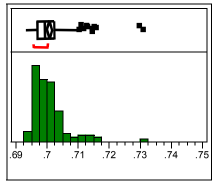
100.0%	maximum	0.73878
99.5%		0.73617
97.5%		0.72364
90.0%		0.71088
75.0%	quartile	0.70455
50.0%	median	0.70024
25.0%	quartile	0.69720
10.0%		0.69544
2.5%		0.69418
0.5%		0.69361
0.0%	minimum	0.69353

Moments

Mean	0.7020844
Std Dev	0.0073371
Std Err Mean	0.0002963
upper 95% Mean	0.7026664
lower 95% Mean	0.7015024
N	613

Distributions

log population density (COAs with incidents of vehicle crime)



Quantiles

100.0%	maximum	0.73136
99.5%		0.73136
97.5%		0.71566
90.0%		0.70859
75.0%	quartile	0.70249
50.0%	median	0.69952
25.0%	quartile	0.69704
10.0%		0.69587
2.5%		0.69477
0.5%		0.69362
0.0%	minimum	0.69362

Moments

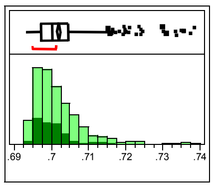
Mean	0.7009028
Std Dev	0.0058268
Std Err Mean	0.0004621
upper 95% Mean	0.7018154
lower 95% Mean	0.6999901
N	159

	all COAs	COAs with incidents	
Mean	0.7020844	0.7009028	-0.17 %
Median	0.70024	0.69952	-0.1 %

Property Damage

Distributions

log population density (all COAs)



Quantiles

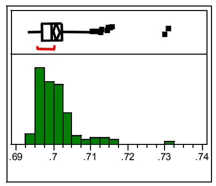
100.0%	maximum	0.73878
99.5%		0.73617
97.5%		0.72364
90.0%		0.71088
75.0%	quartile	0.70455
50.0%	median	0.70024
25.0%	quartile	0.69720
10.0%		0.69544
2.5%		0.69418
0.5%		0.69361
0.0%	minimum	0.69353

Moments

Mean	0.7020844
Std Dev	0.0073371
Std Err Mean	0.0002963
upper 95% Mean	0.7026664
lower 95% Mean	0.7015024
N	613

Distributions

log population density (COAs with incidents of property damage)



Quantiles

100.0%	maximum	0.73136
99.5%		0.73136
97.5%		0.71566
90.0%		0.70859
75.0%	quartile	0.70249
50.0%	median	0.69952
25.0%	quartile	0.69704
10.0%		0.69587
2.5%		0.69477
0.5%		0.69362
0.0%	minimum	0.69362

Moments

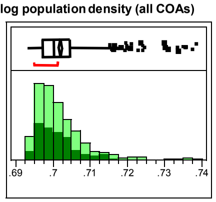
Mean	0.7009028
Std Dev	0.0058268
Std Err Mean	0.0004621
upper 95% Mean	0.7018154
lower 95% Mean	0.6999901
N	159

	all COAs	COAs with incidents	
Mean	0.7020844	0.7009028	-0.17 %
Median	0.70024	0.69952	-0.1 %

Drugs

Distributions

log population density (all COAs)



Quantiles

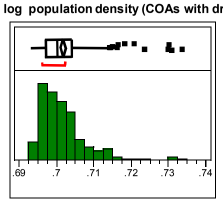
100.0%	maximum	0.73878
99.5%		0.73617
97.5%		0.72364
90.0%		0.71088
75.0%	quartile	0.70455
50.0%	median	0.70024
25.0%	quartile	0.69720
10.0%		0.69544
2.5%		0.69418
0.5%		0.69361
0.0%	minimum	0.69353

Moments

Mean	0.7020844
Std Dev	0.0073371
Std Err Mean	0.0002963
upper 95% Mean	0.7026664
lower 95% Mean	0.7015024
N	613

Distributions

log population density (COAs with drugs incidents)



Quantiles

100.0%	maximum	0.73414
99.5%		0.73304
97.5%		0.71873
90.0%		0.71034
75.0%	quartile	0.70413
50.0%	median	0.70026
25.0%	quartile	0.69722
10.0%		0.69576
2.5%		0.69418
0.5%		0.69362
0.0%	minimum	0.69362

Moments

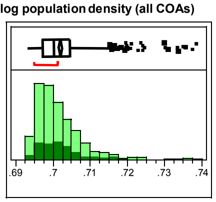
Mean	0.7018226
Std Dev	0.0065585
Std Err Mean	0.0003934
upper 95% Mean	0.702597
lower 95% Mean	0.7010483
N	278

	all COAs	COAs with incidents	
Mean	0.7020844	0.7018226	-0.04 %
Median	0.70024	0.70026	0.003 %

Dumping

Distributions

log population density (all COAs)



Quantiles

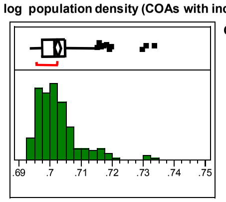
100.0%	maximum	0.73878
99.5%		0.73617
97.5%		0.72364
90.0%		0.71088
75.0%	quartile	0.70455
50.0%	median	0.70024
25.0%	quartile	0.69720
10.0%		0.69544
2.5%		0.69418
0.5%		0.69361
0.0%	minimum	0.69353

Moments

Mean	0.7020844
Std Dev	0.0073371
Std Err Mean	0.0002963
upper 95% Mean	0.7026664
lower 95% Mean	0.7015024
N	613

Distributions

log population density (COAs with incidents of dumping)



Quantiles

100.0%	maximum	0.73414
99.5%		0.73414
97.5%		0.72005
90.0%		0.71266
75.0%	quartile	0.70479
50.0%	median	0.70139
25.0%	quartile	0.69761
10.0%		0.69560
2.5%		0.69420
0.5%		0.69386
0.0%	minimum	0.69386

Moments

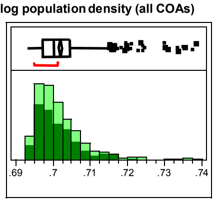
Mean	0.7026038
Std Dev	0.007079
Std Err Mean	0.0005545
upper 95% Mean	0.7036987
lower 95% Mean	0.7015089
N	163

	all COAs	COAs with incidents	
Mean	0.7020844	0.7026038	0.07 %
Median	0.70024	0.70139	0.16 %

Violence

Distributions

log population density (all COAs)



Quantiles

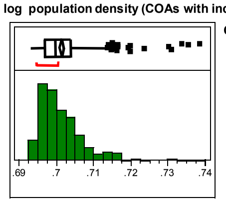
100.0%	maximum	0.73878
99.5%		0.73617
97.5%		0.72364
90.0%		0.71088
75.0%	quartile	0.70455
50.0%	median	0.70024
25.0%	quartile	0.69720
10.0%		0.69544
2.5%		0.69418
0.5%		0.69361
0.0%	minimum	0.69353

Moments

Mean	0.7020844
Std Dev	0.0073371
Std Err Mean	0.0002963
upper 95% Mean	0.7026664
lower 95% Mean	0.7015024
N	613

Distributions

log population density (COAs with incidents of violence)



Quantiles

100.0%	maximum	0.73878
99.5%		0.73571
97.5%		0.71698
90.0%		0.70898
75.0%	quartile	0.70382
50.0%	median	0.69988
25.0%	quartile	0.69703
10.0%		0.69542
2.5%		0.69418
0.5%		0.69362
0.0%	minimum	0.69362

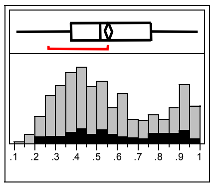
Moments

Mean	0.7015142
Std Dev	0.0065844
Std Err Mean	0.0003288
upper 95% Mean	0.7021606
lower 95% Mean	0.7008678
N	401

	all COAs	COAs with incidents	
Mean	0.7020844	0.7015142	-0.08 %
Median	0.70024	0.69988	-0.05 %

Distributions

Socio-economic index (all COAs)



Quantiles

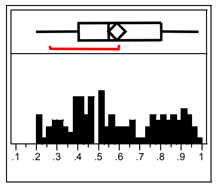
100.0%	maximum	0.98477
99.5%		0.98054
97.5%		0.96425
90.0%		0.92403
75.0%	quartile	0.76293
50.0%	median	0.51613
25.0%	quartile	0.37643
10.0%		0.28349
2.5%		0.21186
0.5%		0.15517
0.0%	minimum	0.12030

Moments

Mean	0.5596768
Std Dev	0.2293943
Std Err Mean	0.0092652
upper 95% Mean	0.5778721
lower 95% Mean	0.5414814
N	613

Distributions

Socio-economic index (COAs with incidents of vehicle crime)



Quantiles

100.0%	maximum	0.98064
99.5%		0.98064
97.5%		0.95932
90.0%		0.90786
75.0%	quartile	0.80641
50.0%	median	0.55160
25.0%	quartile	0.40528
10.0%		0.29508
2.5%		0.21274
0.5%		0.20280
0.0%	minimum	0.20280

Moments

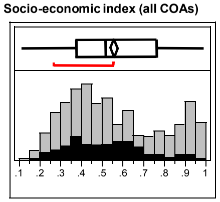
Mean	0.5903244
Std Dev	0.2259058
Std Err Mean	0.0199674
upper 95% Mean	0.6298364
lower 95% Mean	0.5508125
N	128

Vehicle Crime

	all COAs	COAs with incidents	
Mean	0.5596768	0.5903244	5.47 %
Median	0.51613	0.5516	6.87 %

Distributions

Socio-economic index (all COAs)



Quantiles

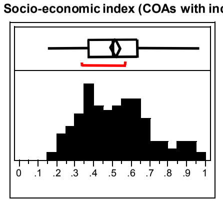
100.0%	maximum	0.98477
99.5%		0.98054
97.5%		0.96425
90.0%		0.92403
75.0%	quartile	0.76293
50.0%	median	0.51613
25.0%	quartile	0.37643
10.0%		0.28349
2.5%		0.21186
0.5%		0.15517
0.0%	minimum	0.12030

Moments

Mean	0.5596768
Std Dev	0.2293943
Std Err Mean	0.0092652
upper 95% Mean	0.5778721
lower 95% Mean	0.5414814
N	613

Distributions

Socio-economic index (COAs with incidents of property damage)



Quantiles

100.0%	maximum	0.96703
99.5%		0.96703
97.5%		0.93548
90.0%		0.77895
75.0%	quartile	0.63809
50.0%	median	0.50617
25.0%	quartile	0.37255
10.0%		0.27642
2.5%		0.21260
0.5%		0.15909
0.0%	minimum	0.15909

Moments

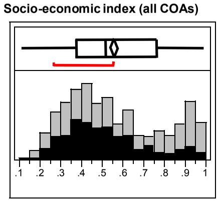
Mean	0.5182093
Std Dev	0.1857127
Std Err Mean	0.014728
upper 95% Mean	0.5472984
lower 95% Mean	0.4891202
N	159

Property Damage

	all COAs	COAs with incidents	
Mean	0.5596768	0.5182093	-7.41 %
Median	0.51613	0.50617	-1.93 %

Distributions

Socio-economic index (all COAs)



Quantiles

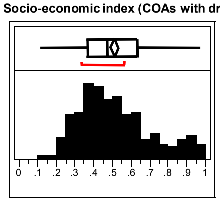
100.0%	maximum	0.98477
99.5%		0.98054
97.5%		0.96425
90.0%		0.92403
75.0%	quartile	0.76293
50.0%	median	0.51613
25.0%	quartile	0.37643
10.0%		0.28349
2.5%		0.21186
0.5%		0.15517
0.0%	minimum	0.12030

Moments

Mean	0.5596768
Std Dev	0.2293943
Std Err Mean	0.0092652
upper 95% Mean	0.5778721
lower 95% Mean	0.5414814
N	613

Distributions

Socio-economic index (COAs with drugs incidents)



Quantiles

100.0%	maximum	0.96855
99.5%		0.96578
97.5%		0.95485
90.0%		0.84144
75.0%	quartile	0.63573
50.0%	median	0.47663
25.0%	quartile	0.36955
10.0%		0.27649
2.5%		0.20924
0.5%		0.12639
0.0%	minimum	0.12030

Moments

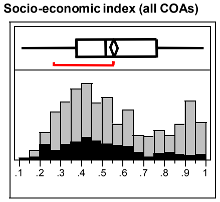
Mean	0.5140522
Std Dev	0.1967544
Std Err Mean	0.0118005
upper 95% Mean	0.5372824
lower 95% Mean	0.4908221
N	278

Drugs

	all COAs	COAs with incidents	
Mean	0.5596768	0.5140522	-8.15 %
Median	0.51613	0.47663	-7.65 %

Distributions

Socio-economic index (all COAs)



Quantiles

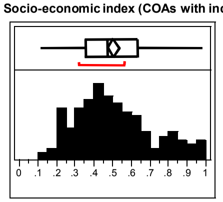
100.0%	maximum	0.98477
99.5%		0.98054
97.5%		0.96425
90.0%		0.92403
75.0%	quartile	0.76293
50.0%	median	0.51613
25.0%	quartile	0.37643
10.0%		0.28349
2.5%		0.21186
0.5%		0.15517
0.0%	minimum	0.12030

Moments

Mean	0.5596768
Std Dev	0.2293943
Std Err Mean	0.0092652
upper 95% Mean	0.5778721
lower 95% Mean	0.5414814
N	613

Distributions

Socio-economic index (COAs with incidents of dumping)



Quantiles

100.0%	maximum	0.97902
99.5%		0.97902
97.5%		0.96077
90.0%		0.83412
75.0%	quartile	0.63415
50.0%	median	0.47253
25.0%	quartile	0.35838
10.0%		0.23525
2.5%		0.17636
0.5%		0.12030
0.0%	minimum	0.12030

Moments

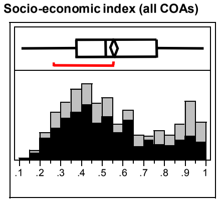
Mean	0.5066315
Std Dev	0.2081571
Std Err Mean	0.0163041
upper 95% Mean	0.5388275
lower 95% Mean	0.4744355
N	163

Dumping

	all COAs	COAs with incidents	
Mean	0.5596768	0.5066315	-9.48 %
Median	0.51613	0.47253	-8.45 %

Distributions

Socio-economic index (all COAs)



Quantiles

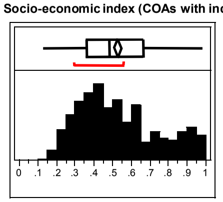
100.0%	maximum	0.98477
99.5%		0.98054
97.5%		0.96425
90.0%		0.92403
75.0%	quartile	0.76293
50.0%	median	0.51613
25.0%	quartile	0.37643
10.0%		0.28349
2.5%		0.21186
0.5%		0.15517
0.0%	minimum	0.12030

Moments

Mean	0.5596768
Std Dev	0.2293943
Std Err Mean	0.0092652
upper 95% Mean	0.5778721
lower 95% Mean	0.5414814
N	613

Distributions

Socio-economic index (COAs with incidents of violence)



Quantiles

100.0%	maximum	0.97902
99.5%		0.97673
97.5%		0.95997
90.0%		0.88156
75.0%	quartile	0.66667
50.0%	median	0.48684
25.0%	quartile	0.36556
10.0%		0.27287
2.5%		0.20943
0.5%		0.15689
0.0%	minimum	0.13571

Moments

Mean	0.5310237
Std Dev	0.2145867
Std Err Mean	0.010716
upper 95% Mean	0.5520903
lower 95% Mean	0.5099571
N	401

Violence

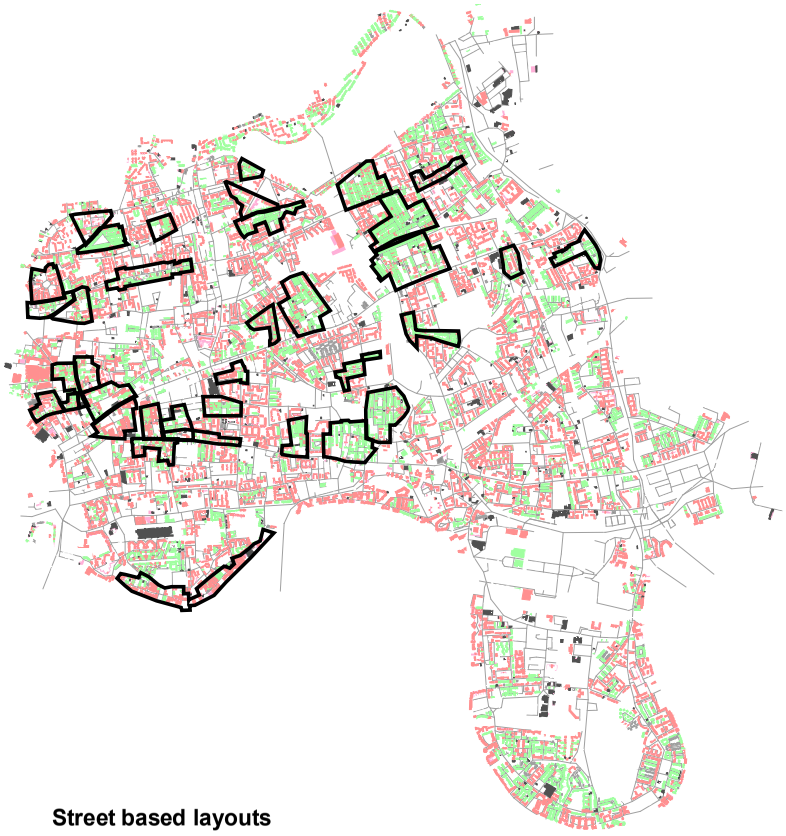
	all COAs	COAs with incidents	
Mean	0.5596768	0.5310237	-5.12 %
Median	0.51613	0.48684	-5.67 %

Incident distribution vs. Socio-economic conditions

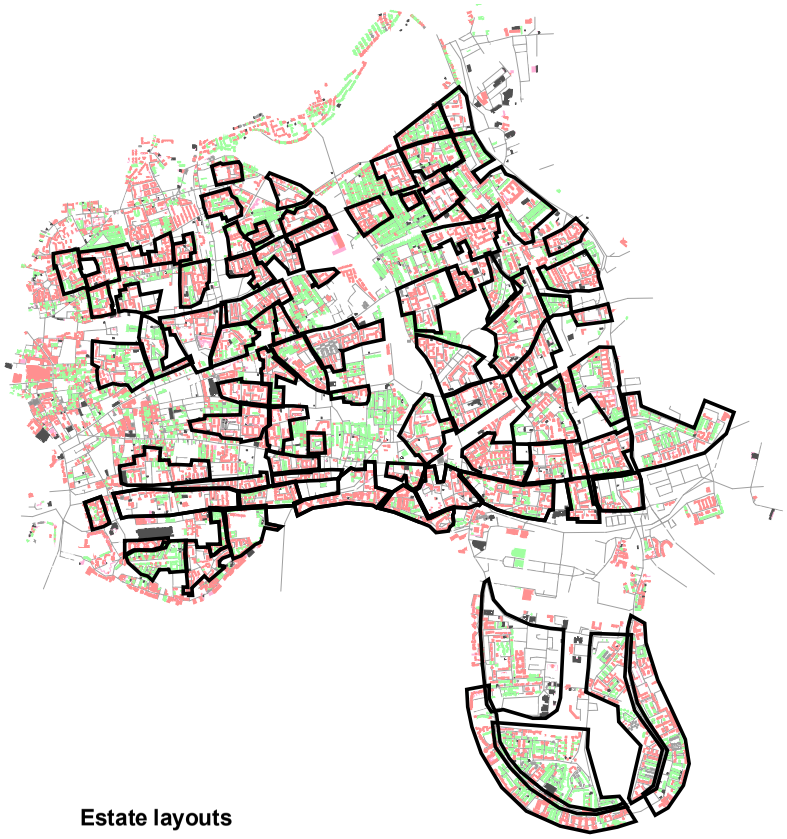
Distributions of Census Output areas (COAs) according to the socio-economic index. Left column shows all COAs, with COAs that have incidents in darker shade. Right column shows the distribution of COAs with incidents only.

Vehicle crime tends to happen in better-off areas, all other incidents tend to happen in more deprived areas. This is least remarkable with violence incidents which are most evenly distributed over the COAs.

2.4 Tower Hamlets Residential Area Analysis



Street based layouts



Estate layouts

2.4 Tower Hamlets Residential Area Analysis

Street based layouts

Estate layouts

Dwellings Type

Detached	(514)
Flat	(9216)
Flats (communal spaces)	(11076)
Semi-Detached	(928)
Terraced	(14972)

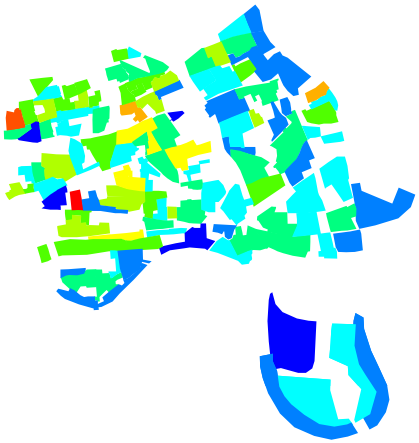
Area types

Residential neighbourhoods shall be classified either as 'street based' layout type or as 'estate' layout type, according to structural and visual properties such as street patterns, building and dwelling type.

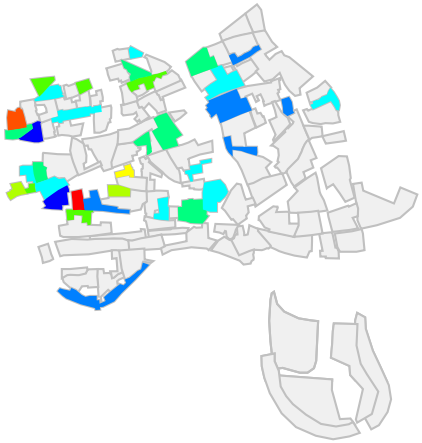
Most of the residential layouts are estate layouts. These are mainly the new developments from the 1950s, that replaced the building stock that was lost in the Second World War. The spatial characteristics in Tower Hamlets are this very different from those in Newham, which is characterised largely through areas of low rise terraced housings.

2.4 Tower Hamlets Residential Area Analysis

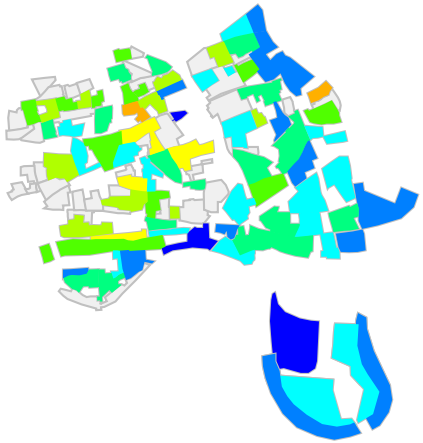
All residential neighbourhoods



Street based layouts



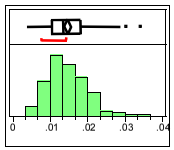
Estate layouts



Population density

Population density is slightly higher in estate layouts. However, there are a few urban blocks that are street based layouts towards the London city centre that have high population densities as well.
This is different from Newham, where the street based layouts are very dense terraces with usually higher than average population density, and the Estate layouts tend to be low rise development with a lower population density.

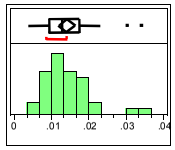
Distributions – All neighbourhoods
Avg Population Density



Quantiles			Moments	
100.0%	maximum	0.03444	Mean	0.0146876
99.5%		0.03444	Std Dev	0.0055146
97.5%		0.02867	Std Err Mean	0.0005055
90.0%		0.02205	upper 95% Mean	0.0156887
75.0%	quartile	0.01823	lower 95% Mean	0.0136865
50.0%	median	0.01360	N	119
25.0%	quartile	0.01051		
10.0%		0.00861		
2.5%		0.00607		
0.5%		0.00410		
0.0%	minimum	0.00410		

Mean	0.0146876	
Median	0.0136	

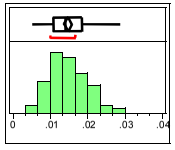
Distributions – Street based layouts
Avg Population Density



Quantiles			Moments	
100.0%	maximum	0.03444	Mean	0.0142257
99.5%		0.03444	Std Dev	0.006276
97.5%		0.03444	Std Err Mean	0.001046
90.0%		0.02242	upper 95% Mean	0.0163492
75.0%	quartile	0.01751	lower 95% Mean	0.0121022
50.0%	median	0.01294	N	36
25.0%	quartile	0.00949		
10.0%		0.00842		
2.5%		0.00410		
0.5%		0.00410		
0.0%	minimum	0.00410		

Mean	0.0142257	- 3.14 %
Median	0.01294	- 4.85 %

Distributions – Estate layouts
Avg Population Density



Quantiles			Moments	
100.0%	maximum	0.02867	Mean	0.0148879
99.5%		0.02867	Std Dev	0.0051785
97.5%		0.02777	Std Err Mean	0.0005684
90.0%		0.02186	upper 95% Mean	0.0160187
75.0%	quartile	0.01850	lower 95% Mean	0.0137572
50.0%	median	0.01404	N	83
25.0%	quartile	0.01092		
10.0%		0.00835		
2.5%		0.00636		
0.5%		0.00536		
0.0%	minimum	0.00536		

Mean	0.0148879	+ 1.36 %
Median	0.01404	+ 3.23 %

TH Neighbourhoods by Avg Population Density

0.0319	to	0.0345	(1)
0.0288	to	0.0319	(1)
0.0257	to	0.0288	(2)
0.0226	to	0.0257	(6)
0.0195	to	0.0226	(12)
0.0164	to	0.0195	(20)
0.0133	to	0.0164	(24)
0.0102	to	0.0133	(30)
0.0071	to	0.0102	(19)
0.004	to	0.0071	(5)

2.4 Tower Hamlets Residential Area Analysis

All residential neighbourhoods

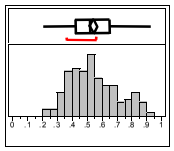
Street based layouts

Estate layouts

Socio-economic conditions

Street based layouts tend to be better-off than Estate layouts. Note that this is although some areas which are on the higher end of the socio-economic scale e.g. On the Isle of Dogs, are Estate layouts.
This again is very different form Newham, where the average socio-economic index is similar for Street based and estate layouts.

Distributions – all residential areas
Socio-economic index

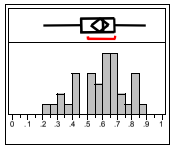


Quantiles			
100.0%	maximum	0.92640	
99.5%		0.92640	
97.5%		0.89038	
90.0%		0.80762	
75.0%	quartile	0.65296	
50.0%	median	0.51792	
25.0%	quartile	0.42216	
10.0%		0.36455	
2.5%		0.28669	
0.5%		0.21126	
0.0%	minimum	0.21126	

Moments	
Mean	0.5434709
Std Dev	0.1616202
Std Err Mean	0.0148157
upper 95% Mean	0.57281
lower 95% Mean	0.5141318
N	119

Mean 0.5434709
Median 0.51792

Distributions – Street based layouts
Socio-economic index

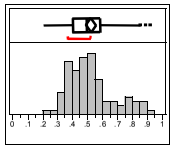


Quantiles			
100.0%	maximum	0.89038	
99.5%		0.89038	
97.5%		0.89038	
90.0%		0.81250	
75.0%	quartile	0.68368	
50.0%	median	0.60704	
25.0%	quartile	0.46099	
10.0%		0.33363	
2.5%		0.21126	
0.5%		0.21126	
0.0%	minimum	0.21126	

Moments	
Mean	0.5870831
Std Dev	0.1653707
Std Err Mean	0.0275618
upper 95% Mean	0.6430365
lower 95% Mean	0.5311297
N	36

Mean 0.5870831 + 8.02 %
Median 0.60704 + 17.21 %

Distributions – Estate layouts
Socio-economic index



Quantiles			
100.0%	maximum	0.92640	
99.5%		0.92640	
97.5%		0.89448	
90.0%		0.77674	
75.0%	quartile	0.58561	
50.0%	median	0.49333	
25.0%	quartile	0.40272	
10.0%		0.36481	
2.5%		0.29674	
0.5%		0.21411	
0.0%	minimum	0.21411	

Moments	
Mean	0.5245548
Std Dev	0.1572227
Std Err Mean	0.017257 4
upper 95% Mean	0.5588853
lower 95% Mean	0.490224 3
N	83

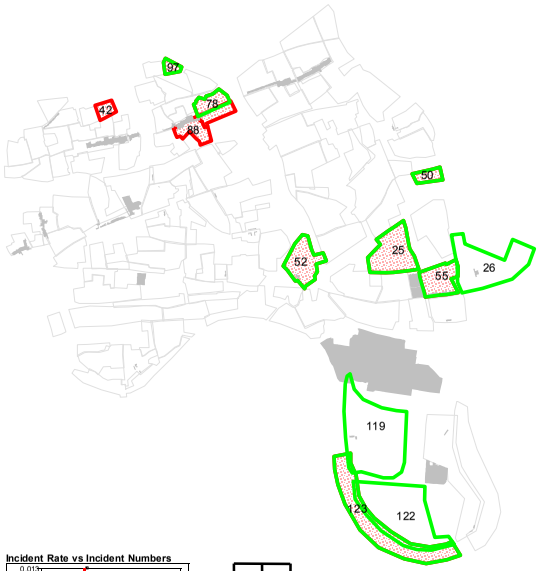
Mean 0.5245548 - 3.48 %
Median 0.49333 - 4.75 %

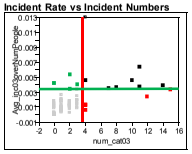
TH Neighbourhoods by Socio-economic index

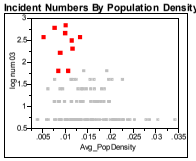
0.859	to	0.927	(4)
0.787	to	0.859	(8)
0.715	to	0.787	(9)
0.643	to	0.715	(10)
0.571	to	0.643	(16)
0.499	to	0.571	(22)
0.427	to	0.499	(20)
0.355	to	0.427	(20)
0.283	to	0.355	(9)
0.211	to	0.283	(2)

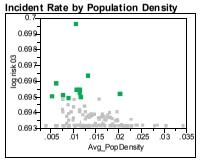
2.4 Tower Hamlets Residential Area Analysis

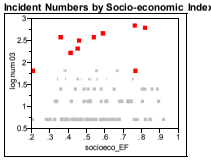
Vehicle Crime - Top Ten Areas for incident number and incident risk

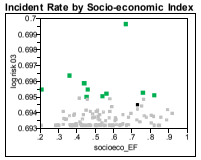




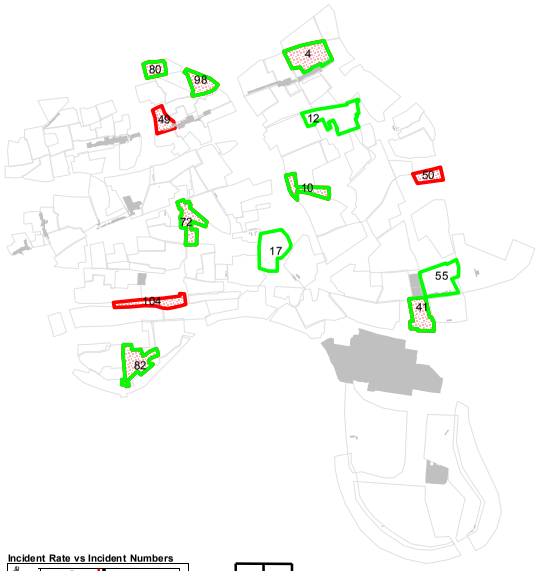


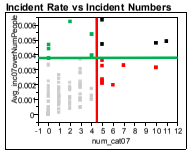


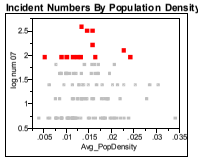


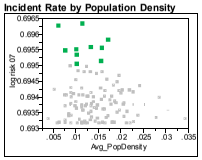


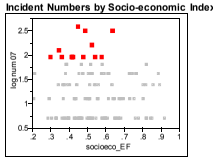
Property Damage - Top Ten Areas for incident number and incident risk

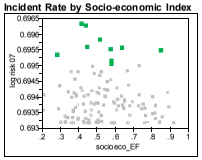




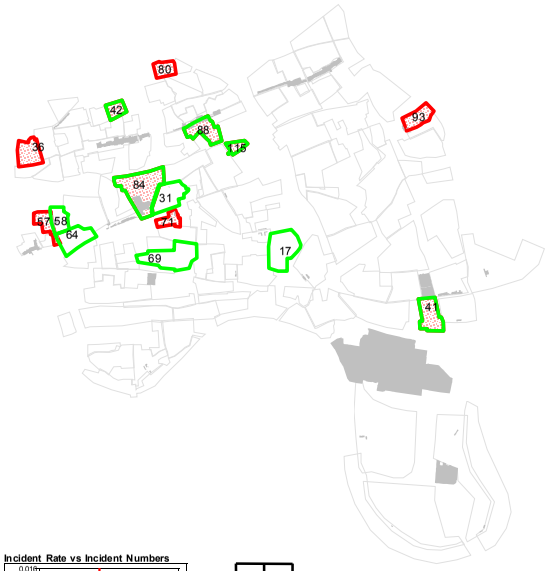


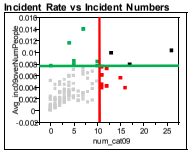


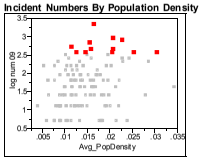


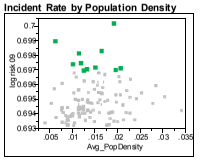


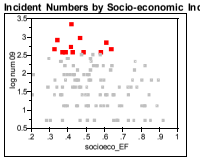
Drugs - Top Ten Areas for incident number and incident risk

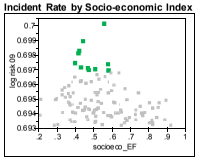






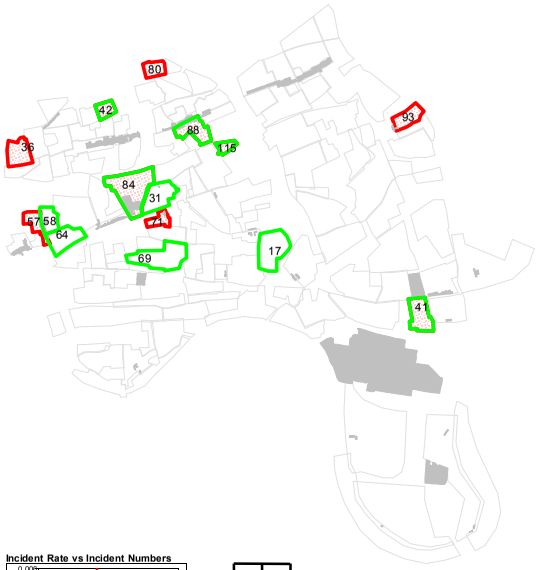


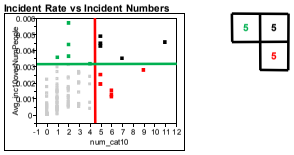


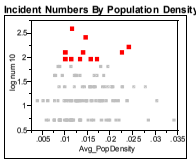


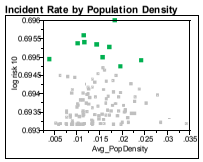
2.4 Tower Hamlets Residential Area Analysis

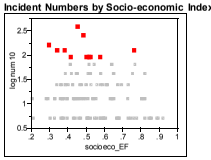
Dumping - Top Ten Areas for incident number and incident risk

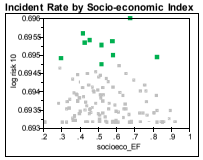




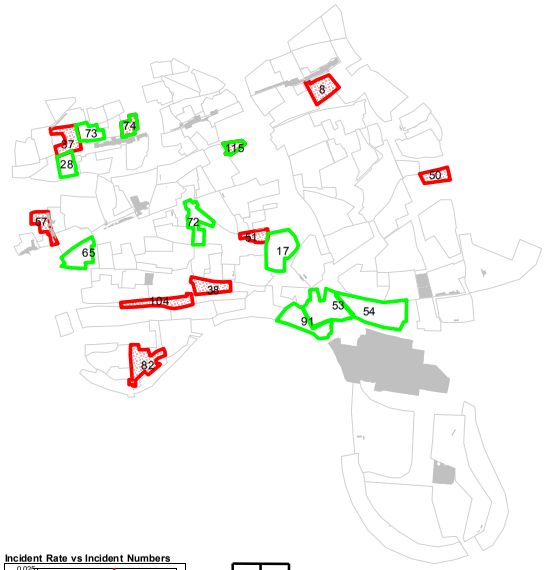


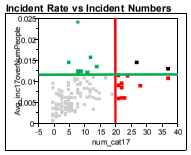


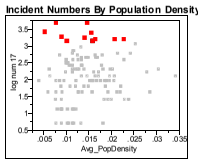


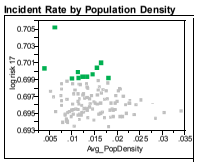


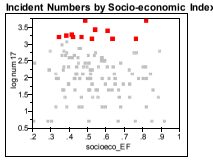
Violence - Top Ten Areas for incident number and incident risk

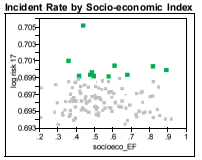












ASB in residential areas

For each incident type, the top ten areas for incident numbers (red) and incident rate – numbers over population: the likelihood for a resident to experience ASB (green) are displayed on the map.

Images and statistics demonstrate that

- there are different 'hotspots' for different incident types
- areas of high incident rate are different from areas with a high rate. For **Vehicle Crime**, incident rates ranks are most similar to incident number ranks (7 out of the respective 10 highest-ranked areas have both highest rates and highest numbers), whilst **Violence** shows the greatest variance (only 2 areas have both highest rates and highest numbers).
- there is no clear correlation of high incident numbers / high incident rate to population density or socio-economic conditions

Top Ten Areas for Incident / Population

Top Ten Areas for Incident Number

Town Centres

3 Newham

Contents

3.1 Newham Introduction

The data set

The data set of ASB incidents for Newham consists of **45.914** reported incidents between 2006 and 2007. Each incident has attached information about date, time and nature of the incident.

There are in total 19 different categories of ASB in the data set, however, we have been focusing on the five categories that have the highest number of incidents:

Motor-Vehicle Crime	885
Graffiti	347
Drugs	676
Violence	828
Prostitution	271
Theft	397

Each incident data point has been associated to the nearest street segment of its occurrence.

Other data

We use the segmented simplified ITN road centre line as specified in section 2, with the space syntax measures **global choice** and **integration radius 800 metric**.

Additionally, we use Census Output Areas and the OS MasterMap Topography layer, as specified in section2, as input for socio-economic data and building information.

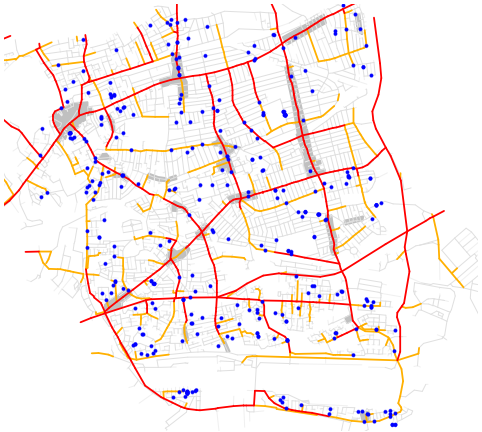
Methodology

In this section, we investigate global incident patterns for Newham

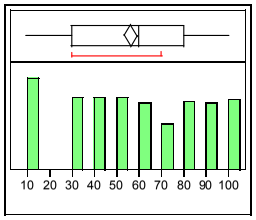
- in relation to spatial measures of the road network
- on Census output area level, in correlation to population density and socio-economic conditions
- on the level of residential areas, in correlation to area type, population density and socio-economic conditions

3.2 Newham Road Net Analysis

Graffiti

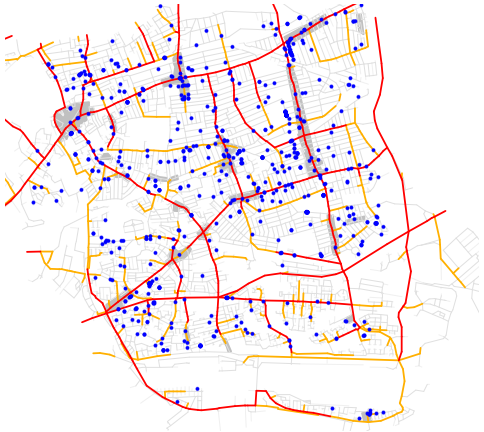


Distributions of incidents over Choice RN deciles of the road network

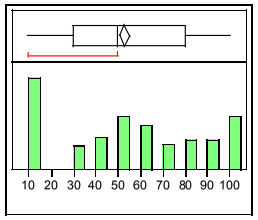


Mean	56.340058
Std Dev	29.063011
Std Err Mean	1.5601842
upper 95% Mean	59.408696
lower 95% Mean	53.271419
N	347

Drugs

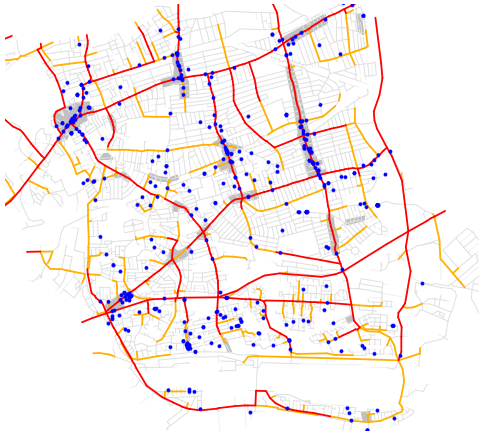


Distributions of incidents over Choice RN deciles of the road network

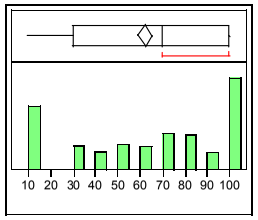


Mean	53.085106
Std Dev	31.382748
Std Err Mean	1.1444111
upper 95% Mean	55.331732
lower 95% Mean	50.838481
N	752

Theft



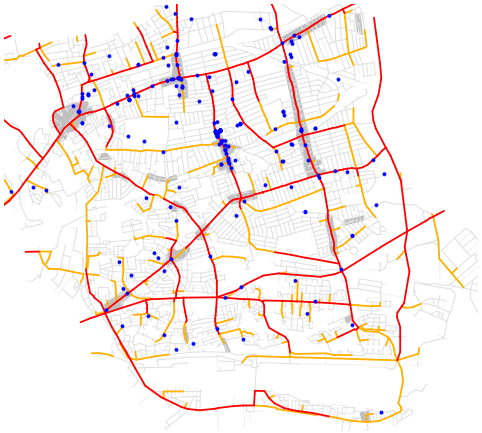
Distributions of incidents over Choice RN deciles of the road network



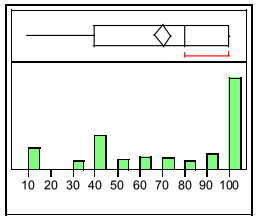
Mean	62.342569
Std Dev	33.208912
Std Err Mean	1.6667075
upper 95% Mean	65.619271
lower 95% Mean	59.065868
N	397

3.2 Newham Road Net Analysis

Prostitution

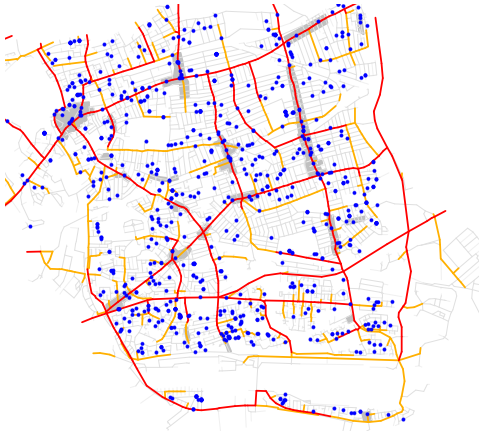


Distributions of incidents over Choice RN deciles of the road network

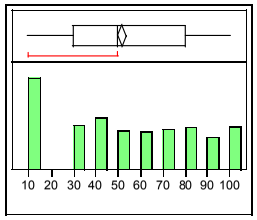


Mean	70.479705
Std Dev	31.835087
Std Err Mean	1.9338438
upper 95% Mean	74.287035
lower 95% Mean	66.672374
N	271

Violence



Distributions of incidents over Choice RN deciles of the road network



Mean	51.956522
Std Dev	30.251474
Std Err Mean	1.0513114
upper 95% Mean	54.020074
lower 95% Mean	49.892969
N	828

Legend

Deciles Choice RN

- Highest decile
- Second highest decile
- All other
- Town centres

Incident distribution on Betweenness

These pages shows the distribution of incidents over deciles of global through-movement (Choice RN): Firstly, we analyse the road network to obtain values of choice for each segment. Then, we calculate the deciles for the range of the choice values, and assign each street segment to a deciles bin.

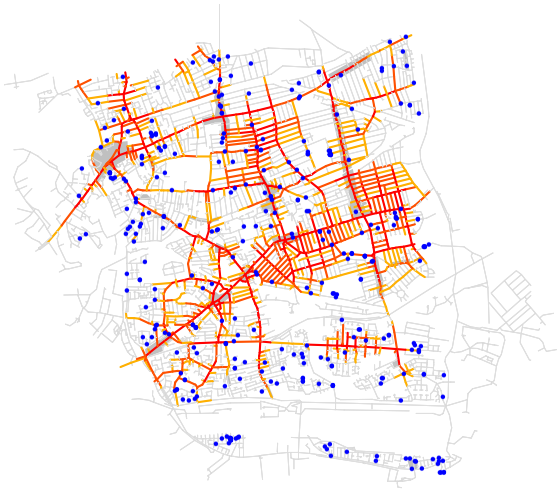
Incident are plotted on the road network, showing the 20% segments with the greatest movement potential (the 2 upper deciles of choice).

The statistics show incident distributions over choice deciles. Incidents seem to be rather evenly distributed over the range of values. **Note that the lowest decile bin actually contains the number of elements that should distribute over the lowest and second lowest bi**n – the spatial network contains very many segments with Choice zero. The 'peaking' lowest bin is therefore misleading.

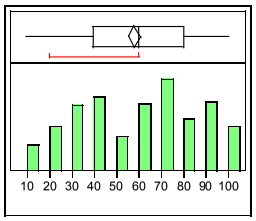
Some incident types (**Drugs, Graffiti, Violence**) seem quite randomly distributed over the borough, and are evenly distributed over the range of choice values. **Theft** and **Prostitution** appear to cluster around high streets in some places – but not in others-, and happen predominantly on high-choice segment; this corresponds to the visible 'hotspots' around some high streets. However, there are areas with more dispersed patters as well.

3.2 Newham Road Net Analysis

Graffiti



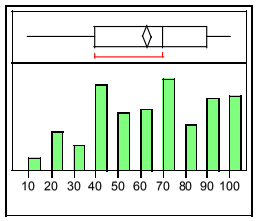
Distributions of incidents
over IntegrationR800m deciles of the road network



Mean	58.126801
Std Dev	26.198576
Std Err Mean	1.4064132
upper 95% Mean	60.892996
lower 95% Mean	55.360606
N	347

Drugs

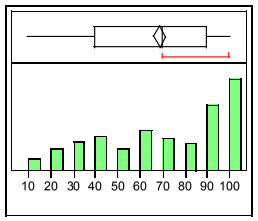
Distributions of incidents
over IntegrationR800m deciles of the road network



Mean	63.085106
Std Dev	25.340361
Std Err Mean	0.9240679
upper 95% Mean	64.89917
lower 95% Mean	61.271043
N	752

Theft

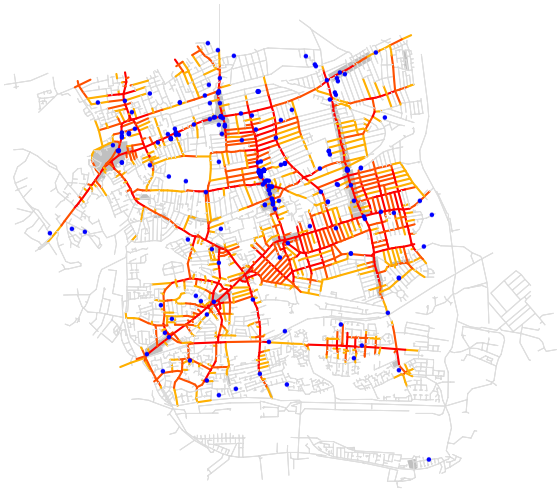
Distributions of incidents
over IntegrationR800m deciles of the road network



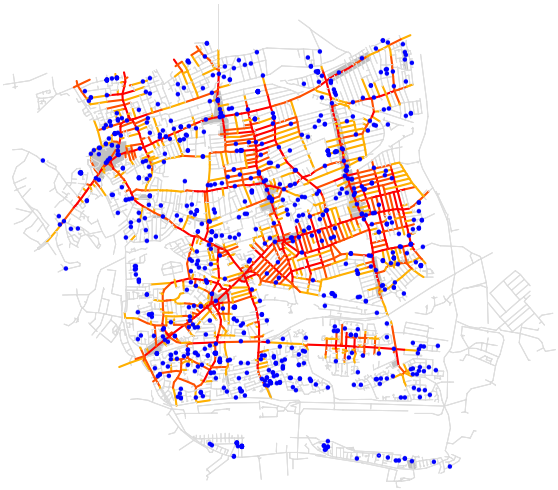
Mean	68.992443
Std Dev	28.12297
Std Err Mean	1.4114514
upper 95% Mean	71.767318
lower 95% Mean	66.217568
N	397

3.2 Newham Road Net Analysis

Prostitution



Violence



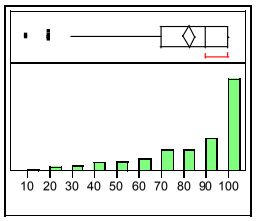
Incident distribution on Accessibility

These pages shows the distribution of incidents over deciles of local accessibility (Integration R800m): Again, we calculate the deciles for the range of the integration values, and assign each street segment to a deciles bin.

Incident are plotted on the road network, showing the 20% segments with the greatest accessibility (the 2 upper deciles of integration). Accessibility is highest around the local town centres.

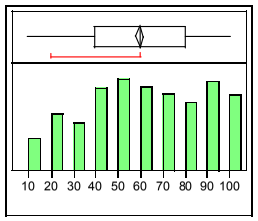
The statistics show incident distributions over integration. Incident distribution slightly tend towards higher accessible spaces for some incident types (**Drugs, violence**). **Theft** and **Prostitution**, again, show a strong tendency towards highly accessible spaces.

Distributions of incidents over IntegrationR800m deciles of the road network



Mean	82.583026
Std Dev	22.243758
Std Err Mean	1.351212
upper 95% Mean	85.243277
lower 95% Mean	79.922774
N	271

Distributions of incidents over IntegrationR800m deciles of the road network



Mean	59.915459
Std Dev	26.484786
Std Err Mean	0.9204099
upper 95% Mean	61.722073
lower 95% Mean	58.108845
N	828

Legend

Deciles Integration R800m

- Highest decile
- Second highest decile
- All other
- Town centres

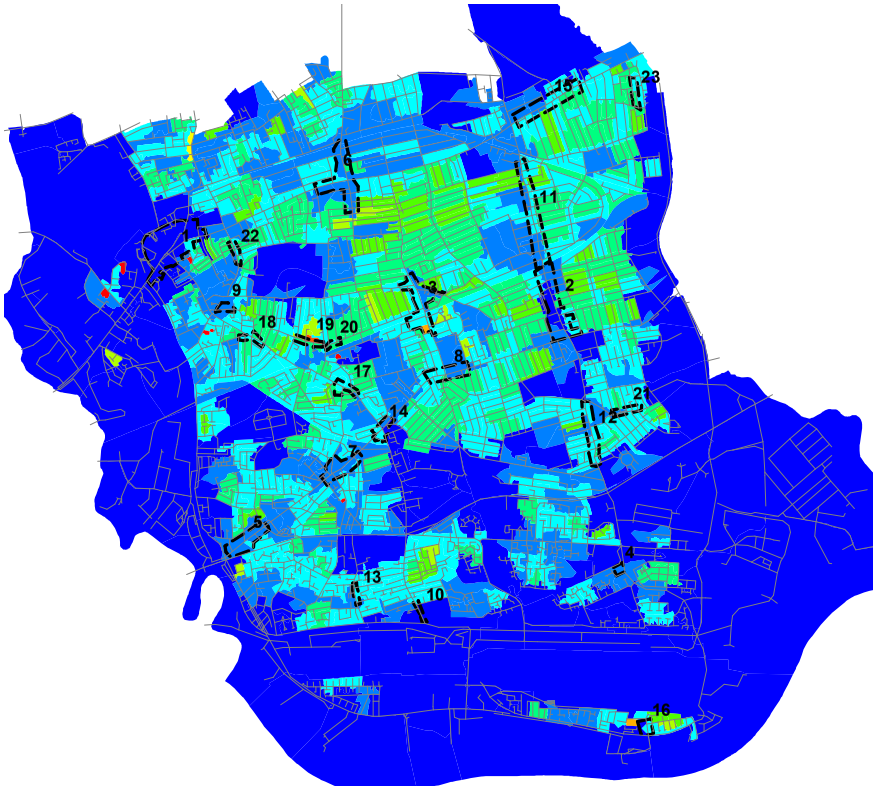
3.3 Newham COA Analysis

Centres

ID	Name	Classification
1	STRATFORD	Major Centre
2	EAST HAM	Major Centre
3	GREEN STREET	District Centre
4	EAST BECKTON	District Centre
5	CANNING TOWN	District Centre
6	FOREST GATE	District Centre
7	ABBEY ARMS	Local Centre
8	BOLEYN	Local Centre
9	CHURCH STREET	Local Centre
10	CUNDY ROAD	Local Centre
11	EAST HAM HIGH STREET NORTH	Local Centre
12	EAST HAM HIGH STREET SOUTH	Local Centre
13	FREEMASONS ROAD	Local Centre
14	GREENGATE	Local Centre
15	MANOR PARK	Local Centre
16	NORTH WOOLWICH	Local Centre
17	PLAISTOW HIGH ST	Local Centre
18	PLAISTOW ROAD	Local Centre
19	STRATFORD ROAD	Local centre
20	TERRACE ROAD	Local Centre
21	VICARAGE LANE E6	Local Centre
22	VIRCAGE LANE	Local Centre
23	WALTER HURFORD PARADE	Local Centre

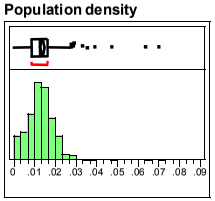
Population density

0.05	to	1	(29)
0.045	to	0.05	(7)
0.035	to	0.04	(15)
0.03	to	0.035	(22)
0.025	to	0.03	(44)
0.02	to	0.025	(63)
0.015	to	0.02	(101)
0.01	to	0.015	(117)
0.005	to	0.01	(138)
0	to	0.005	(70)
all others			(17)



Distributions

Population density



Quantiles

100.0%	maximum	0.25783
99.5%		0.12928
97.5%		0.02692
90.0%		0.02069
75.0%	quartile	0.01655
50.0%	median	0.01287
25.0%	quartile	0.00885
10.0%		0.00436
2.5%		0.00104
0.5%		0.00022
0.0%	minimum	0.00011

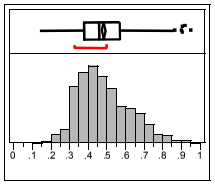
Moments

Mean	0.0139493
Std Dev	0.0142976
Std Err Mean	0.0005281
upper 95% Mean	0.0149861
lower 95% Mean	0.0129126
N	733

3.3 Newham COA Analysis

Distributions

Socio-economic index



Quantiles		
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments	
Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Population density and socio-economic conditions

Maps show thematic maps of population density and socio-economic conditions for Census output areas (COAs). – For calculations of these measures refer to section 2.

Both population density and socio-economic index are slightly lower than in Tower Hamlets. Population density is highest in the terraced housing areas between East Ham and Upton Park. This is also the area with the lowest socio-economic index. Areas in the North-West (Stratford) and in the south-East (south East Ham, Beckton) are better-off.

Incident distribution vs. Population density

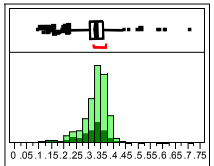
Distributions of Census Output areas (COAs) according to population density. Left column shows all COAs, with COAs that have incidents in darker shade. Right column shows the distribution of COAs with incidents only.

Mean and median population density tend to be slightly lower for areas with incidents than the total mean / median. This applies especially for Theft, but also for Graffiti and Prostitution. This may reflect the tendency for these to happen on high streets in local centres – these are usually low-density COAs.

Graffiti

Distributions

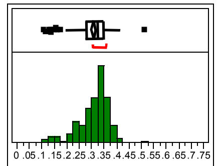
4th root of population density (all COAs)



Quantiles			Moments	
100.0%	maximum	0.71258	Mean	0.3286592
99.5%		0.59940	Std Dev	0.0581126
97.5%		0.40505	Std Err Mean	0.0021464
90.0%		0.37926	upper 95% Mean	0.3328731
75.0%	quartile	0.35869	lower 95% Mean	0.3244453
50.0%	median	0.33679	N	733
25.0%	quartile	0.30676		
10.0%		0.25689		
2.5%		0.17958		
0.5%		0.12114		
0.0%	minimum	0.10215		

Distributions

4th root of population density (COAs with incidents only)



Quantiles			Moments	
100.0%	maximum	0.51563	Mean	0.3095157
99.5%		0.51563	Std Dev	0.0605847
97.5%		0.39256	Std Err Mean	0.0043386
90.0%		0.36863	upper 95% Mean	0.3180725
75.0%	quartile	0.34695	lower 95% Mean	0.3009589
50.0%	median	0.32511	N	195
25.0%	quartile	0.28175		
10.0%		0.22780		
2.5%		0.14032		
0.5%		0.11085		
0.0%	minimum	0.11085		

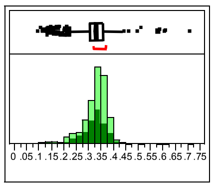
Graffiti

	all COAs	COAs with incidents	
Mean	0.3286592	0.3095157	-5.82 %
Median	0.33679	0.32511	-3.47 %

Drugs

Distributions

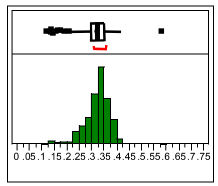
4th root of population density (all COAs)



Quantiles			Moments	
100.0%	maximum	0.71258	Mean	0.3286592
99.5%		0.59940	Std Dev	0.0581126
97.5%		0.40505	Std Err Mean	0.0021464
90.0%		0.37926	upper 95% Mean	0.3328731
75.0%	quartile	0.35869	lower 95% Mean	0.3244453
50.0%	median	0.33679	N	733
25.0%	quartile	0.30676		
10.0%		0.25689		
2.5%		0.17958		
0.5%		0.12114		
0.0%	minimum	0.10215		

Distributions

4th root of population density (COAs with incidents only)



Quantiles			Moments	
100.0%	maximum	0.58566	Mean	0.3225953
99.5%		0.48960	Std Dev	0.0519196
97.5%		0.39637	Std Err Mean	0.0029394
90.0%		0.37848	upper 95% Mean	0.3283789
75.0%	quartile	0.35409	lower 95% Mean	0.3168118
50.0%	median	0.32934	N	312
25.0%	quartile	0.29978		
10.0%		0.25691		
2.5%		0.17717		
0.5%		0.13185		
0.0%	minimum	0.12202		

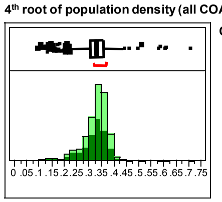
Drugs

	all COAs	COAs with incidents	
Mean	0.3286592	0.3225953	-1.85 %
Median	0.33679	0.32934	-2.21 %

Violence

Distributions

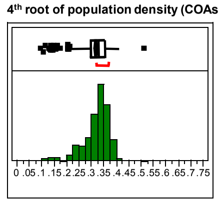
4th root of population density (all COAs)



Quantiles			Moments	
100.0%	maximum	0.71258	Mean	0.3286592
99.5%		0.59940	Std Dev	0.0581126
97.5%		0.40505	Std Err Mean	0.0021464
90.0%		0.37926	upper 95% Mean	0.3328731
75.0%	quartile	0.35869	lower 95% Mean	0.3244453
50.0%	median	0.33679	N	733
25.0%	quartile	0.30676		
10.0%		0.25689		
2.5%		0.17958		
0.5%		0.12114		
0.0%	minimum	0.10215		

Distributions

4th root of population density (COAs with incidents only)



Quantiles			Moments	
100.0%	maximum	0.51563	Mean	0.319282
99.5%		0.42443	Std Dev	0.0548094
97.5%		0.38845	Std Err Mean	0.0028379
90.0%		0.37396	upper 95% Mean	0.3248624
75.0%	quartile	0.35466	lower 95% Mean	0.3137016
50.0%	median	0.33047	N	373
25.0%	quartile	0.29958		
10.0%		0.24542		
2.5%		0.15351		
0.5%		0.10972		
0.0%	minimum	0.10215		

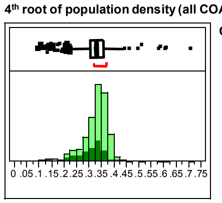
Violence

	all COAs	COAs with incidents	
Mean	0.3286592	0.319282	-2.85 %
Median	0.33679	0.33047	-1.88 %

Theft

Distributions

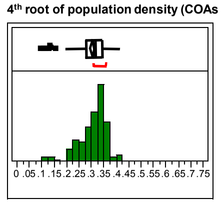
4th root of population density (all COAs)



Quantiles			Moments	
100.0%	maximum	0.71258	Mean	0.3286592
99.5%		0.59940	Std Dev	0.0581126
97.5%		0.40505	Std Err Mean	0.0021464
90.0%		0.37926	upper 95% Mean	0.3328731
75.0%	quartile	0.35869	lower 95% Mean	0.3244453
50.0%	median	0.33679	N	733
25.0%	quartile	0.30676		
10.0%		0.25689		
2.5%		0.17958		
0.5%		0.12114		
0.0%	minimum	0.10215		

Distributions

4th root of population density (COAs with incidents only)



Quantiles			Moments	
100.0%	maximum	0.41450	Mean	0.3055147
99.5%		0.41450	Std Dev	0.0561001
97.5%		0.39102	Std Err Mean	0.0041584
90.0%		0.35723	upper 95% Mean	0.3137199
75.0%	quartile	0.34484	lower 95% Mean	0.2973095
50.0%	median	0.31979	N	182
25.0%	quartile	0.27936		
10.0%		0.22709		
2.5%		0.13708		
0.5%		0.10215		
0.0%	minimum	0.10215		

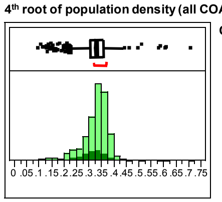
Theft

	all COAs	COAs with incidents	
Mean	0.3286592	0.3055147	-7.04 %
Median	0.33679	0.31979	-5.05 %

Prostitution

Distributions

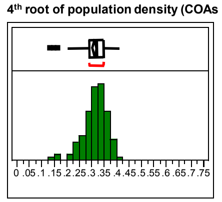
4th root of population density (all COAs)



Quantiles			Moments	
100.0%	maximum	0.71258	Mean	0.3286592
99.5%		0.59940	Std Dev	0.0581126
97.5%		0.40505	Std Err Mean	0.0021464
90.0%		0.37926	upper 95% Mean	0.3328731
75.0%	quartile	0.35869	lower 95% Mean	0.3244453
50.0%	median	0.33679	N	733
25.0%	quartile	0.30676		
10.0%		0.25689		
2.5%		0.17958		
0.5%		0.12114		
0.0%	minimum	0.10215		

Distributions

4th root of population density (COAs with incidents only)



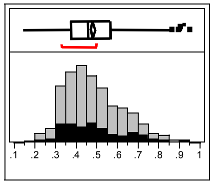
Quantiles			Moments	
100.0%	maximum	0.41081	Mean	0.3142793
99.5%		0.41081	Std Dev	0.0495342
97.5%		0.38742	Std Err Mean	0.0047664
90.0%		0.37271	upper 95% Mean	0.3237282
75.0%	quartile	0.34680	lower 95% Mean	0.3048304
50.0%	median	0.32218	N	108
25.0%	quartile	0.29096		
10.0%		0.24727		
2.5%		0.16410		
0.5%		0.13941		
0.0%	minimum	0.13941		

Prostitution

	all COAs	COAs with incidents	
Mean	0.3286592	0.3142793	-4.38 %
Median	0.33679	0.32218	-4.34 %

Distributions

Socio-economic conditions (all COAs)



Quantiles

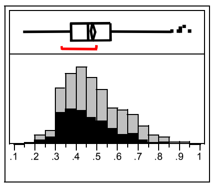
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments

Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Distributions

Socio-economic conditions (all COAs)



Quantiles

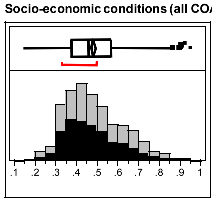
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments

Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Distributions

Socio-economic conditions (all COAs)



Quantiles

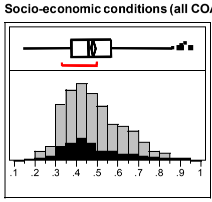
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments

Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Distributions

Socio-economic conditions (all COAs)



Quantiles

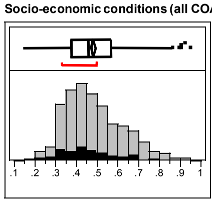
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments

Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Distributions

Socio-economic conditions (all COAs)



Quantiles

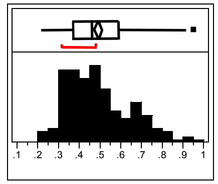
100.0%	maximum	0.95513
99.5%		0.91198
97.5%		0.80505
90.0%		0.67671
75.0%	quartile	0.57020
50.0%	median	0.45833
25.0%	quartile	0.37851
10.0%		0.32364
2.5%		0.25512
0.5%		0.20422
0.0%	minimum	0.14815

Moments

Mean	0.4830563
Std Dev	0.1397551
Std Err Mean	0.005162
upper 95% Mean	0.4931903
lower 95% Mean	0.4729222
N	733

Distributions

Socio-economic index (COAs with incidents only)



Quantiles

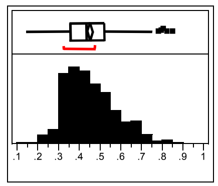
100.0%	maximum	0.95513
99.5%		0.95513
97.5%		0.85059
90.0%		0.70655
75.0%	quartile	0.59223
50.0%	median	0.46154
25.0%	quartile	0.37333
10.0%		0.32284
2.5%		0.25129
0.5%		0.22222
0.0%	minimum	0.22222

Moments

Mean	0.4933617
Std Dev	0.1534168
Std Err Mean	0.0109864
upper 95% Mean	0.5150298
lower 95% Mean	0.4716935
N	195

Distributions

Socio-economic index (COAs with incidents only)



Quantiles

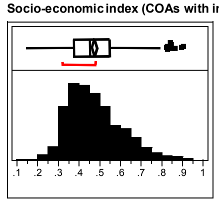
100.0%	maximum	0.85714
99.5%		0.84224
97.5%		0.73428
90.0%		0.64171
75.0%	quartile	0.52381
50.0%	median	0.43750
25.0%	quartile	0.36126
10.0%		0.31646
2.5%		0.24231
0.5%		0.17206
0.0%	minimum	0.14815

Moments

Mean	0.4540356
Std Dev	0.1252834
Std Err Mean	0.0070928
upper 95% Mean	0.4679915
lower 95% Mean	0.4400797
N	312

Distributions

Socio-economic index (COAs with incidents only)



Quantiles

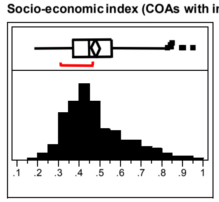
100.0%	maximum	0.91241
99.5%		0.90545
97.5%		0.81674
90.0%		0.66069
75.0%	quartile	0.55193
50.0%	median	0.45454
25.0%	quartile	0.37562
10.0%		0.32754
2.5%		0.26862
0.5%		0.18497
0.0%	minimum	0.14815

Moments

Mean	0.4757414
Std Dev	0.1344138
Std Err Mean	0.0069597
upper 95% Mean	0.4894267
lower 95% Mean	0.4620562
N	373

Distributions

Socio-economic index (COAs with incidents only)



Quantiles

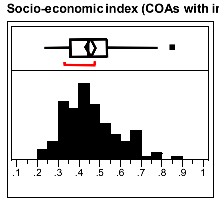
100.0%	maximum	0.95513
99.5%		0.95513
97.5%		0.85502
90.0%		0.70461
75.0%	quartile	0.55780
50.0%	median	0.44918
25.0%	quartile	0.37310
10.0%		0.31854
2.5%		0.24508
0.5%		0.19048
0.0%	minimum	0.19048

Moments

Mean	0.480891
Std Dev	0.1521546
Std Err Mean	0.0112784
upper 95% Mean	0.5031451
lower 95% Mean	0.4586369
N	182

Distributions

Socio-economic index (COAs with incidents only)



Quantiles

100.0%	maximum	0.85714
99.5%		0.85714
97.5%		0.77589
90.0%		0.65839
75.0%	quartile	0.53579
50.0%	median	0.44444
25.0%	quartile	0.35877
10.0%		0.30688
2.5%		0.24746
0.5%		0.24242
0.0%	minimum	0.24242

Moments

Mean	0.4576859
Std Dev	0.130473
Std Err Mean	0.0125548
upper 95% Mean	0.4825743
lower 95% Mean	0.4327976
N	108

Graffiti

	all COAs	COAs with incidents	
Mean	0.4830563	0.4933617	**2.13 %**
Median	0.45833	0.46154	**0.7 %**

Drugs

	all COAs	COAs with incidents	
Mean	0.4830563	0.4540356	**-6.0 %**
Median	0.45833	0.4375	**-4.54 %**

Violence

	all COAs	COAs with incidents	
Mean	0.4830563	0.4757414	**-1.51 %**
Median	0.45833	0.45454	**-0.83 %**

Theft

	all COAs	COAs with incidents	
Mean	0.4830563	0.480891	**-0.45 %**
Median	0.45833	0.44918	**-2.0 %**

Prostitution

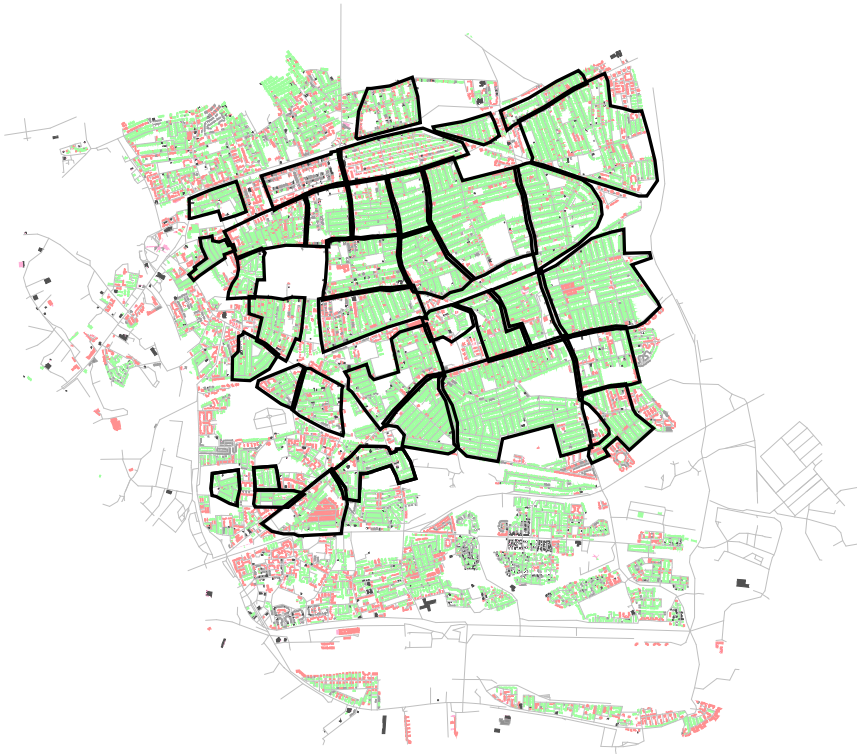
	all COAs	COAs with incidents	
Mean	0.4830563	0.4576859	**-5.25 %**
Median	0.45833	0.44444	**-3.03 %**

Incident distribution vs. Socio-economic conditions

Distributions of Census Output areas (COAs) according to the socio-economic index. Left column shows all COAs, with COAs that have incidents in darker shade. Right column shows the distribution of COAs with incidents only.

Socio-economic conditions seem to have less impact than in Tower Hamlet – the distribution of COAs with incidents is proportional to the total distribution for **Graffiti, violence** and **Theft. Drugs** and **Prostitution** incidents tend to happen in less well-off areas.

3.4 Newham Residential Area Analysis

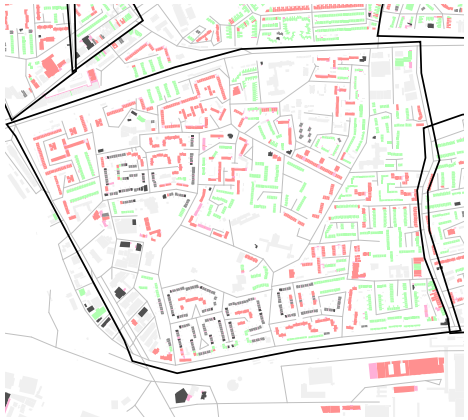


Street based layouts

Estate layouts

3.4 Newham Residential Area Analysis

Street based layouts



Estate layouts

Area types

Residential neighbourhoods shall be classified either as 'street based' layout type or as 'estate' layout type, according to structural and visual properties such as street patterns, building and dwelling type.

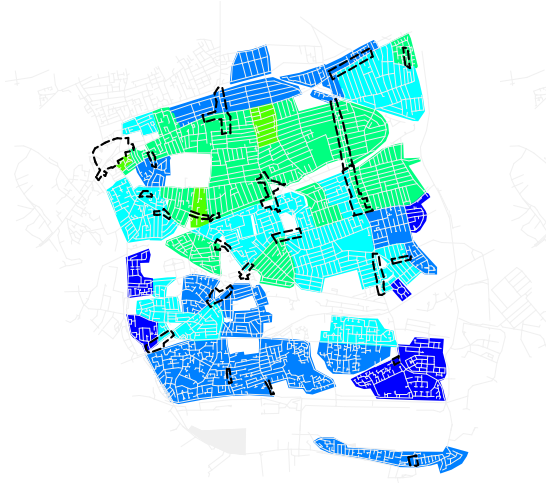
Different from Tower Hamlets, most of the areas are Street based layouts of low rise terraced houses. In the south and West of the Borough, there are several post-war developments that are Estate layouts, many of them consisting of low rise terraced houses or low rise blocks.

Dwellings Type

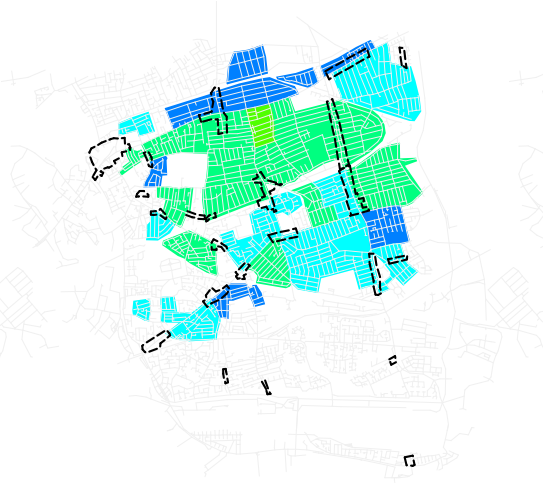
Detached	(891)
Flat	(9154)
Flats (communal space)	(13906)
Semi-Detached	(3351)
Terraced	(53346)

3.4 Newham Residential Area Analysis

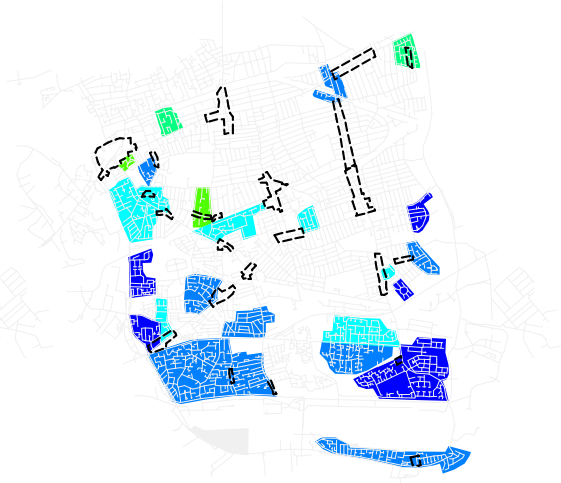
All residential neighbourhoods



Street based layouts



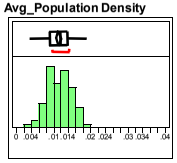
Estate layouts



Population density

In Newham, the street based layouts are very dense terraces with usually higher than average population density, and the Estate layouts tend to be low rise development with a lower population density.
Note that in Tower Hamlets, we find the reverse.

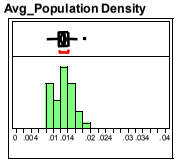
Distributions – all residential layouts
Avg_Population Density



Quantiles			Moments	
100.0%	maximum	0.01871	Mean	0.0114104
99.5%		0.01871	Std Dev	0.0032047
97.5%		0.01798	Std Err Mean	0.0003975
90.0%		0.01551	upper 95% Mean	0.0122045
75.0%	quartile	0.01382	lower 95% Mean	0.0106163
50.0%	median	0.01185	N	65
25.0%	quartile	0.00905		
10.0%		0.00697		
2.5%		0.00457		
0.5%		0.00385		
0.0%	minimum	0.00385		

Mean 0.011
Median 0.012

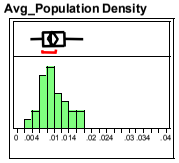
Distributions – Street based layouts
Avg_Population Density



Quantiles			Moments	
100.0%	maximum	0.01871	Mean	0.0127054
99.5%		0.01871	Std Dev	0.0023944
97.5%		0.01871	Std Err Mean	0.0003991
90.0%		0.01603	upper 95% Mean	0.0135156
75.0%	quartile	0.01415	lower 95% Mean	0.0118953
50.0%	median	0.01285	N	36
25.0%	quartile	0.01151		
10.0%		0.00919		
2.5%		0.00853		
0.5%		0.00853		
0.0%	minimum	0.00853		

Mean 0.013 + 18.18 %
Median 0.013 + 8.33 %

Distributions – Estate layouts
Avg_Population Density



Quantiles			Moments	
100.0%	maximum	0.01758	Mean	0.0097669
99.5%		0.01758	Std Dev	0.0035123
97.5%		0.01758	Std Err Mean	0.0006759
90.0%		0.01498	upper 95% Mean	0.0111563
75.0%	quartile	0.01275	lower 95% Mean	0.0083775
50.0%	median	0.00913	N	27
25.0%	quartile	0.00699		
10.0%		0.00532		
2.5%		0.00385		
0.5%		0.00385		
0.0%	minimum	0.00385		

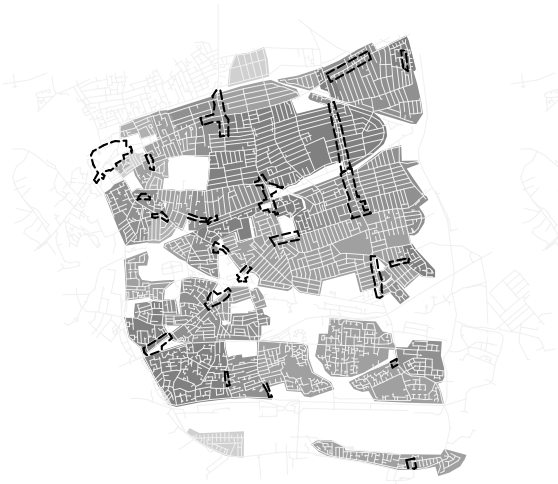
Mean 0.01 - 9.09 %
Median 0.009 - 25 %

N Neighbourhoods by Avg Population Density

0.0319	to	0.0345	(1)
0.0288	to	0.0319	(1)
0.0257	to	0.0288	(2)
0.0226	to	0.0257	(6)
0.0195	to	0.0226	(12)
0.0164	to	0.0195	(20)
0.0133	to	0.0164	(24)
0.0102	to	0.0133	(30)
0.0071	to	0.0102	(19)
0.004	to	0.0071	(5)

3.4 Newham Residential Area Analysis

All residential neighbourhoods



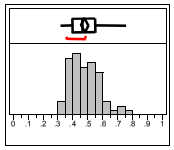
Street based layouts

Estate layouts

Socio-economic conditions

In Newham, the average socio-economic index is similar for Street based and estate layouts. There are, for example, several well-off estate layouts in the South of the Borough, such as in Beckton or North Woolwich. This is different from Tower Hamlets, where street based layouts tend to be better off than estates.

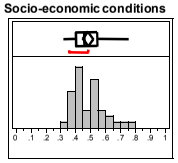
Distributions – all residential areas
Socio-economic index



Quantiles			Moments	
100.0%	maximum	0.75294	Mean	0.4817968
99.5%		0.75294	Std Dev	0.1013829
97.5%		0.74661	Std Err Mean	0.012575
90.0%		0.62186	upper 95% Mean	0.5069183
75.0%	quartile	0.55095	lower 95% Mean	0.4566754
50.0%	median	0.46294	N	65
25.0%	quartile	0.40070		
10.0%		0.36532		
2.5%		0.33012		
0.5%		0.32326		
0.0%	minimum	0.32326		

Mean 0.482
Median 0.463

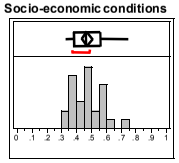
Distributions – Street based layouts
Socio-economic conditions



Quantiles			Moments	
100.0%	maximum	0.75294	Mean	0.4868008
99.5%		0.75294	Std Dev	0.1057224
97.5%		0.75294	Std Err Mean	0.0176204
90.0%		0.64564	upper 95% Mean	0.5225721
75.0%	quartile	0.54551	lower 95% Mean	0.4510295
50.0%	median	0.46004	N	36
25.0%	quartile	0.40442		
10.0%		0.36743		
2.5%		0.32326		
0.5%		0.32326		
0.0%	minimum	0.32326		

Mean 0.487 + 1.04 %
Median 0.46 - 0.64 %

Distributions – Estate layouts
Socio-economic conditions



Quantiles			Moments	
100.0%	maximum	0.74320	Mean	0.4715856
99.5%		0.74320	Std Dev	0.0994057
97.5%		0.74320	Std Err Mean	0.0191306
90.0%		0.60103	upper 95% Mean	0.5109092
75.0%	quartile	0.56113	lower 95% Mean	0.432262
50.0%	median	0.46282	N	27
25.0%	quartile	0.38137		
10.0%		0.35364		
2.5%		0.33382		
0.5%		0.33382		
0.0%	minimum	0.33382		

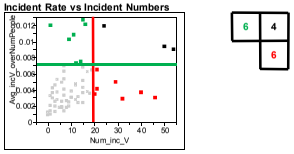
Mean 0.472 - 2.07 %
Median 0.463 0 %

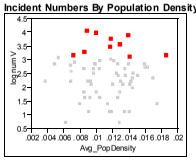
TH Neighbourhoods by Socio-economic index

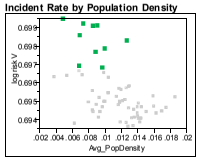
0.859	to	0.927	(4)
0.787	to	0.859	(8)
0.715	to	0.787	(9)
0.643	to	0.715	(10)
0.571	to	0.643	(16)
0.499	to	0.571	(22)
0.427	to	0.499	(20)
0.355	to	0.427	(20)
0.283	to	0.355	(9)
0.211	to	0.283	(2)

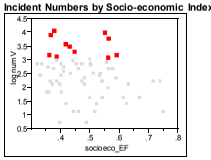
3.4 Newham Residential Area Analysis

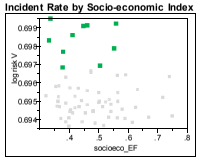
Vehicle Crime - Top Ten Areas for incident number and incident risk



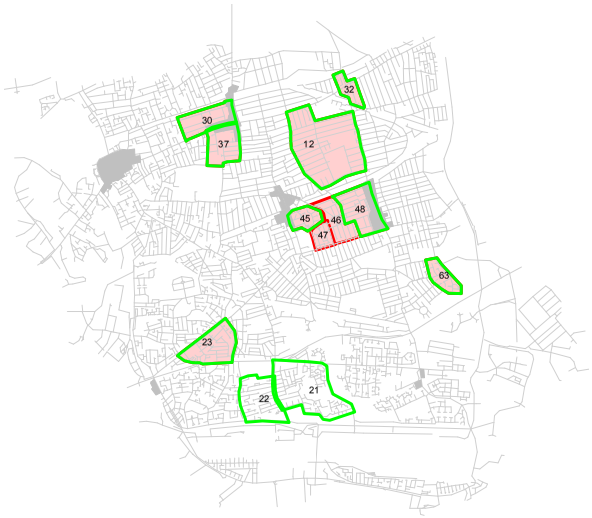


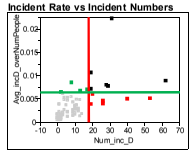


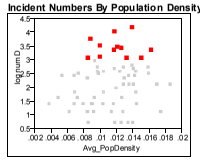


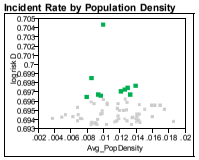


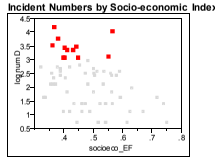
Drugs - Top Ten Areas for incident number and incident risk

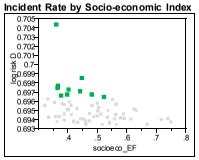




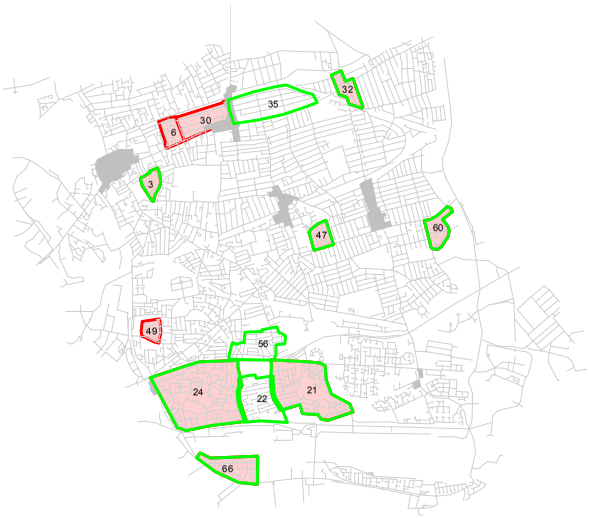


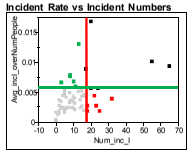


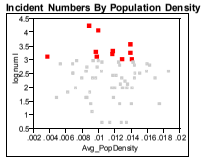


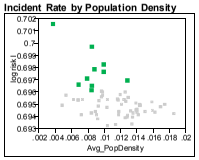


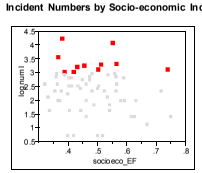
Violence - Top Ten Areas for incident number and incident risk

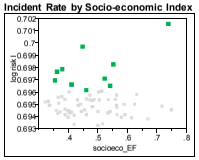






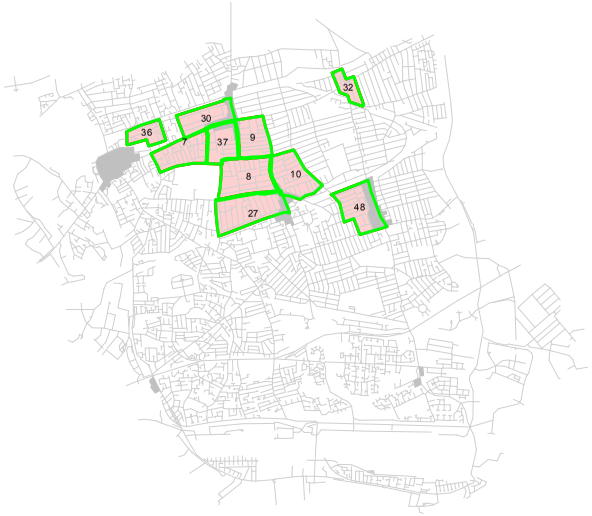


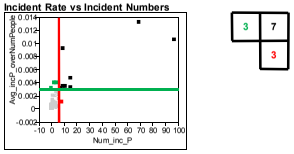


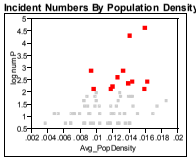


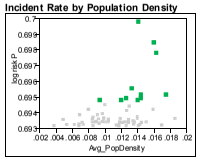
3.4 Newham Residential Area Analysis

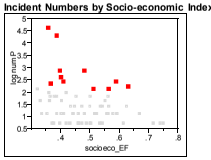
Prostitution - Top Ten Areas for incident number and incident risk

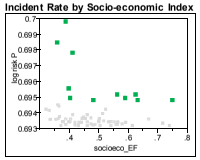




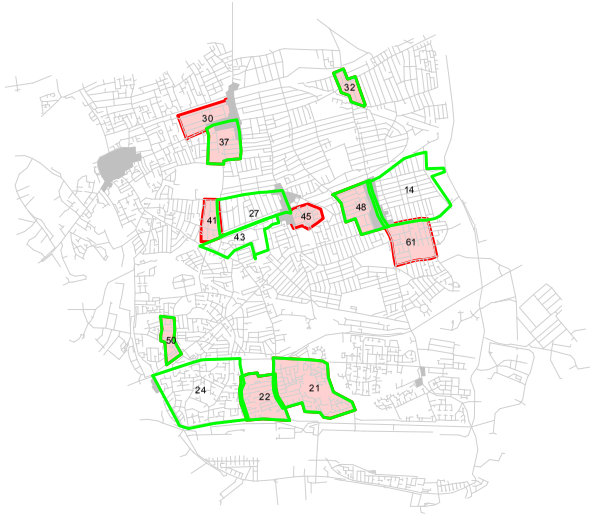


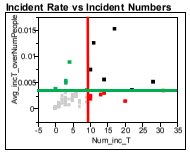


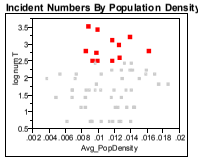


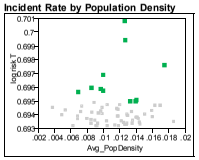


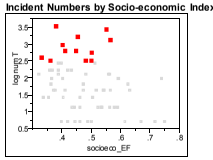
Theft - Top Ten Areas for incident number and incident risk

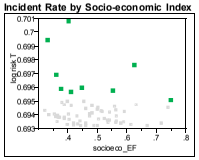












ASB in residential areas

For each incident type, the top ten areas for incident numbers (red) and incident rate – numbers over population: the likelihood for a resident to experience ASB (green) are displayed on the map.

Images and statistics demonstrate that

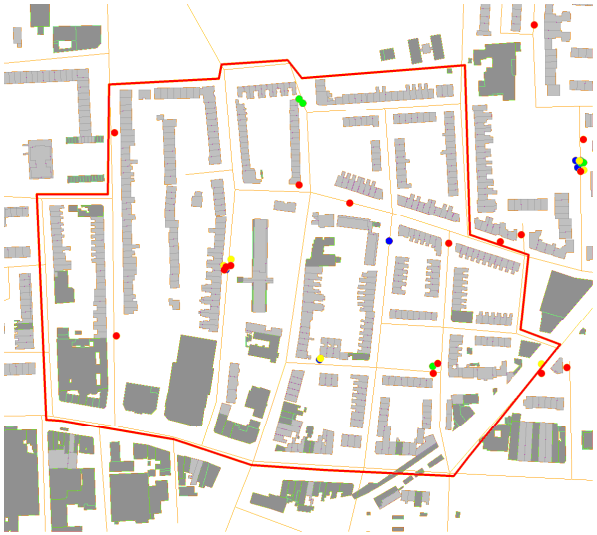
- there are different 'hotspots' for different incident types
- areas of high incident rate are different from areas with a high rate. For **Prostitution**, incident rates ranks are most similar to incident number ranks (9 out of the respective 10 highest-ranked areas have both highest rates and highest numbers), whilst **Vehicle Crime** shows the greatest variance (only 4 areas have both highest rates and highest numbers).
- there is no clear correlation of high incident numbers / high incident rate to population density or socio-economic conditions

Top Ten Areas for Incident / Population

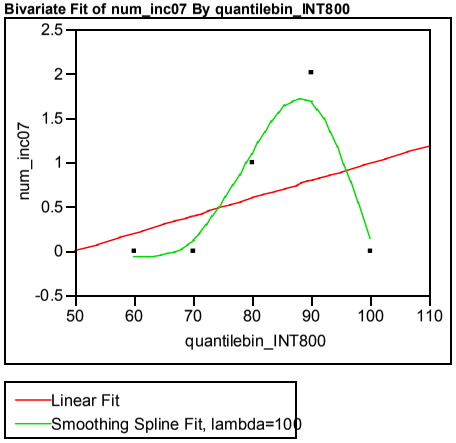
Top Ten Areas for Incident Number

Town Centres

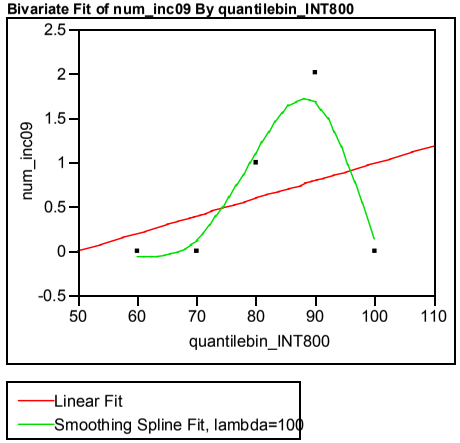
4 Tower Hamlets Street based Layout: Barnes Street



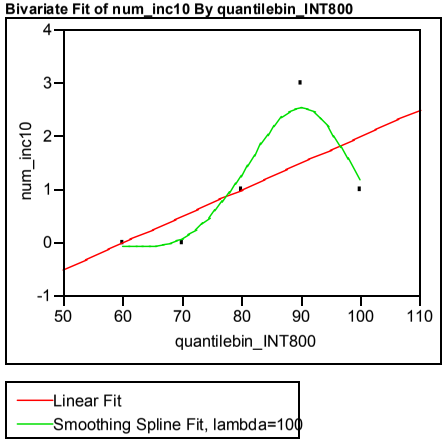
Property Damage



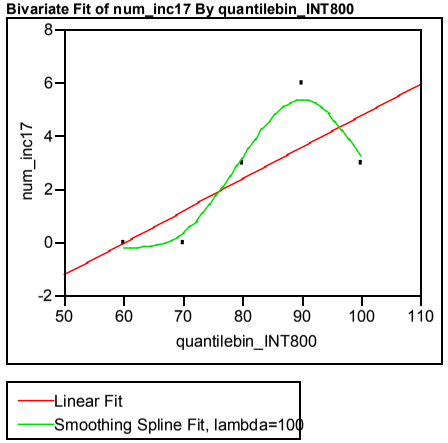
Drugs



Dumping



Violence



4 Tower Hamlets Street based Layout: Mossford Street

Dwellings Type

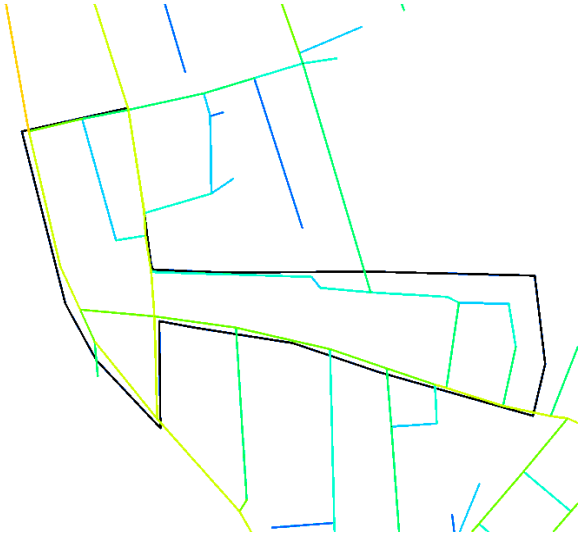
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

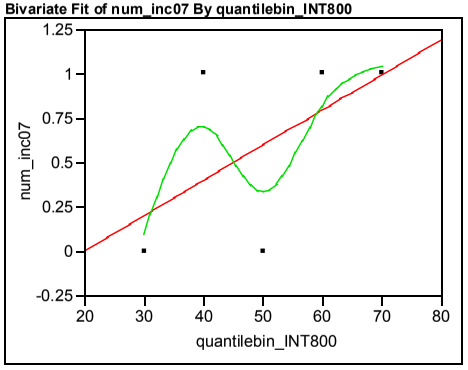
- Property Damage
- Drugs
- Dumping
- Violence

M25 by Deciles Integration R800

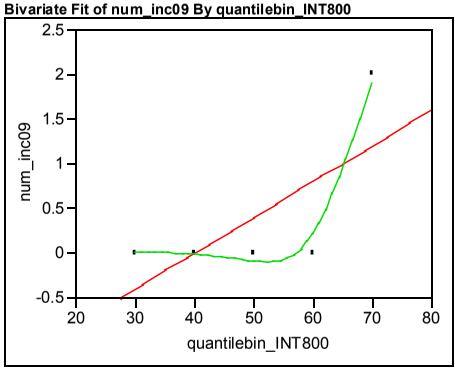
100 to 100	(569)
90 to 100	(569)
80 to 90	(569)
70 to 80	(569)
60 to 70	(569)
50 to 60	(570)
40 to 50	(569)
30 to 40	(569)
10 to 30	(1138)



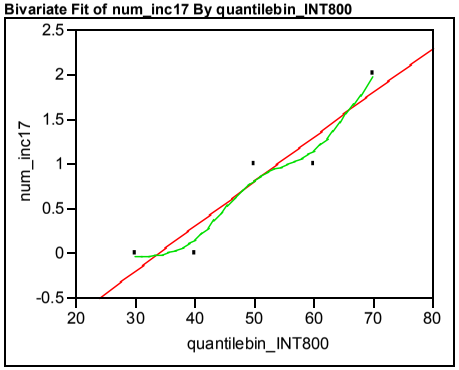
Property Damage



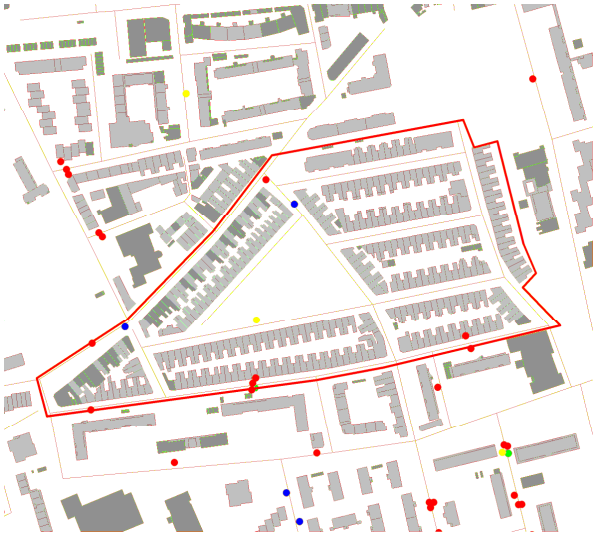
Drugs



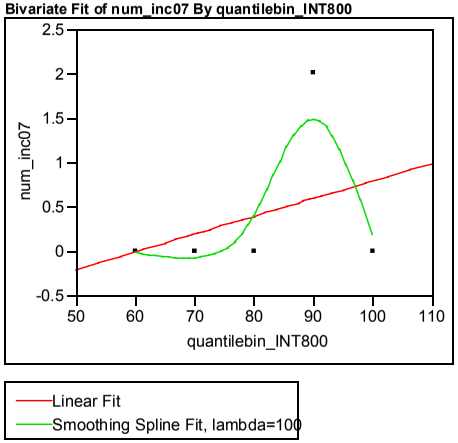
Violence



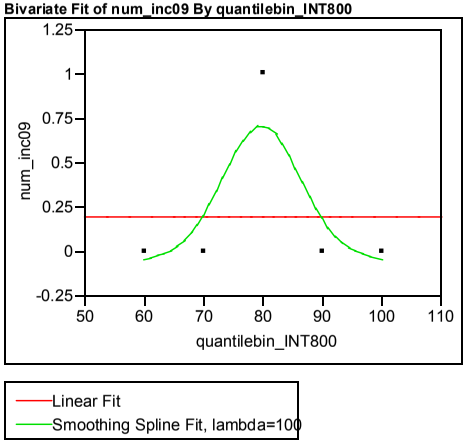
4 Tower Hamlets Street based Layout: Ravenscroft Street



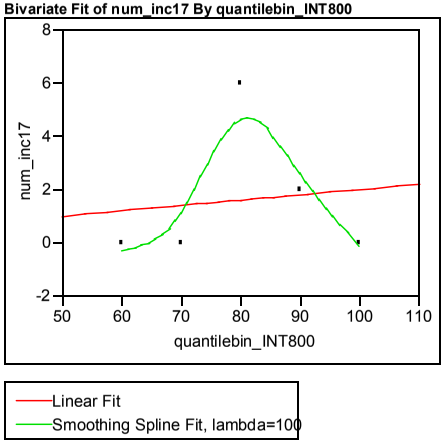
Property Damage



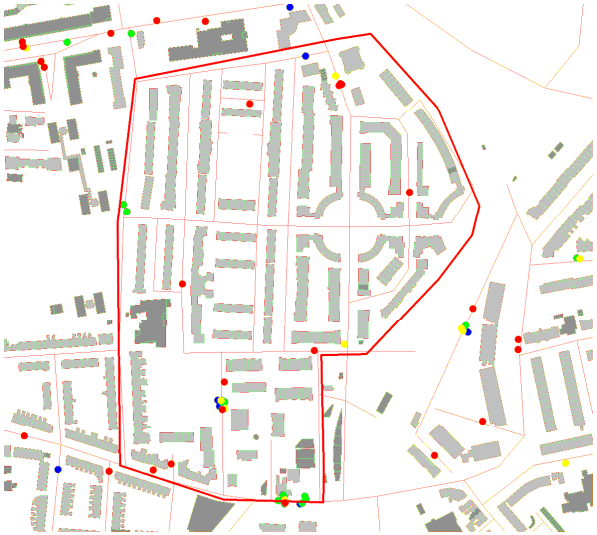
Drugs

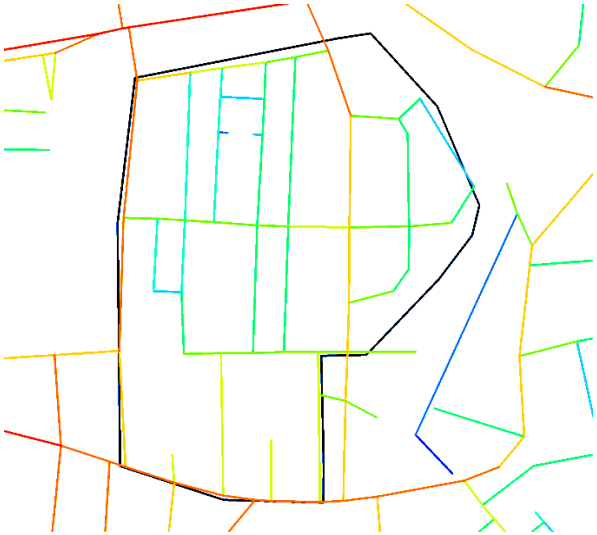


Violence

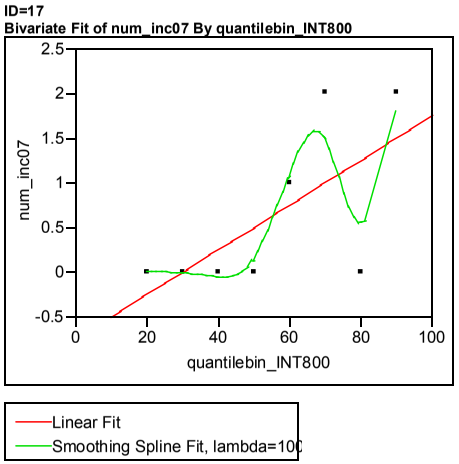


4 Tower Hamlets Street based Layout: Glasworthy Avenue

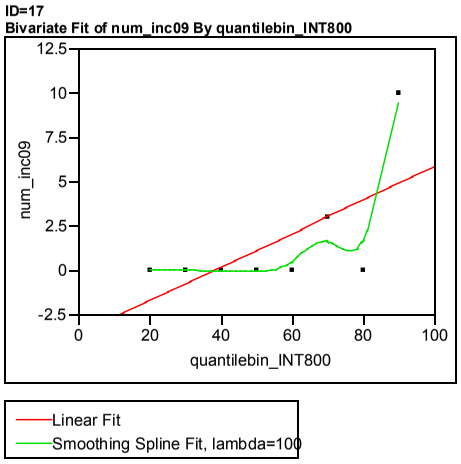




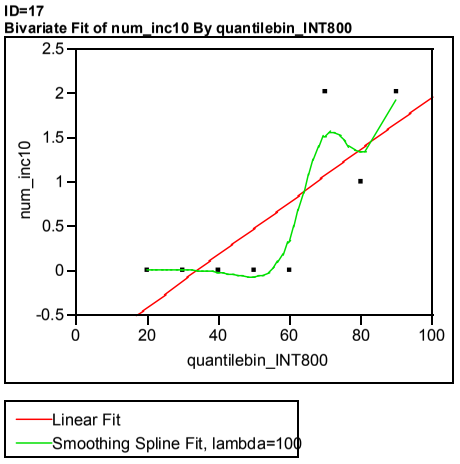
Property Damage



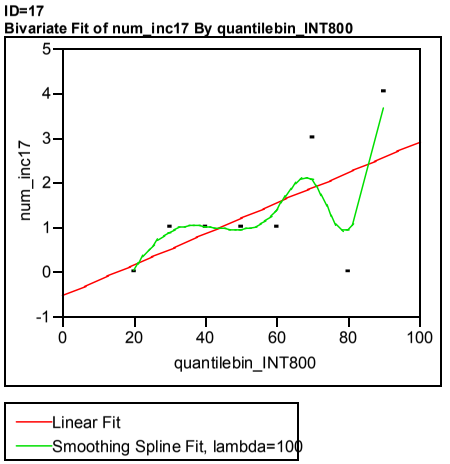
Drugs



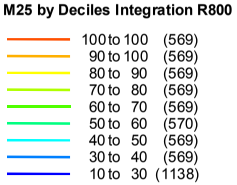
Dumping

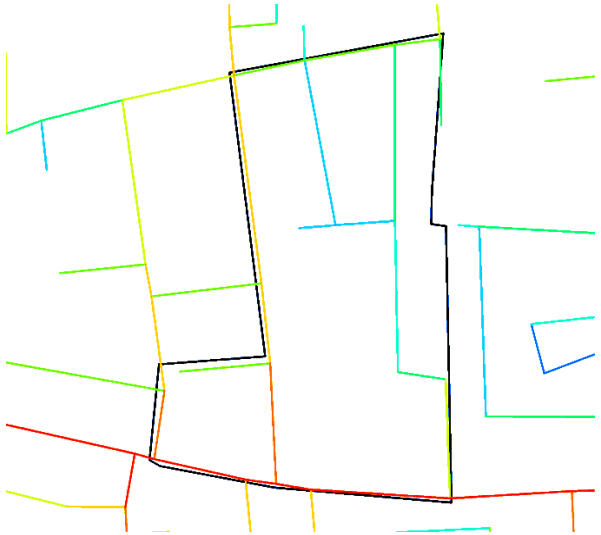


Violence

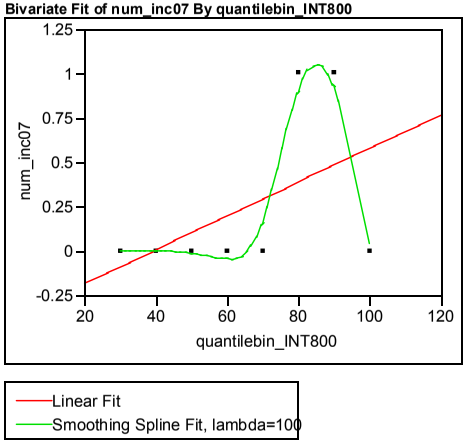


4 Tower Hamlets Street based Layout: Senrab Street

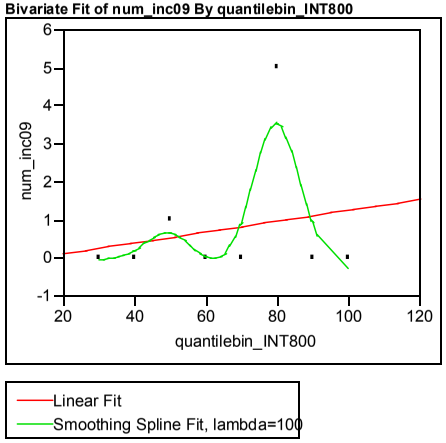




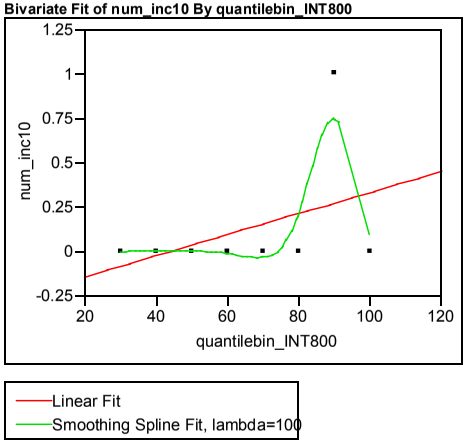
Property Damage



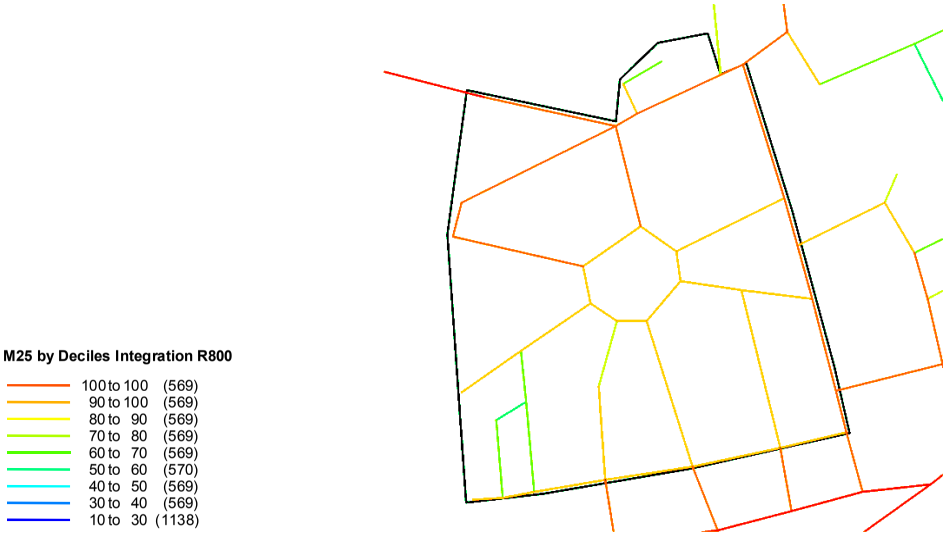
Drugs



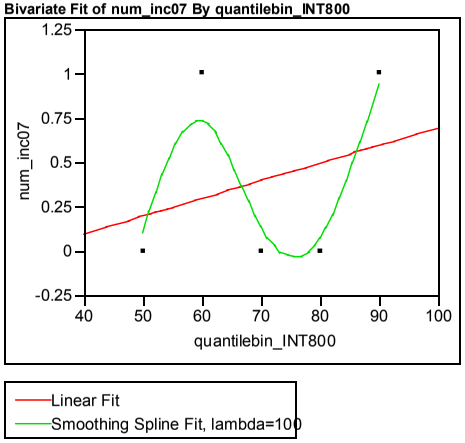
Violence



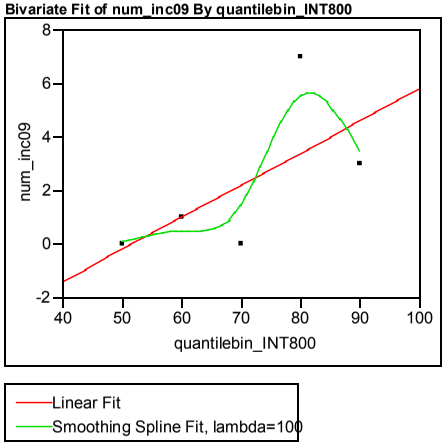
4 Tower Hamlets Street based Layout: Arnold Circus



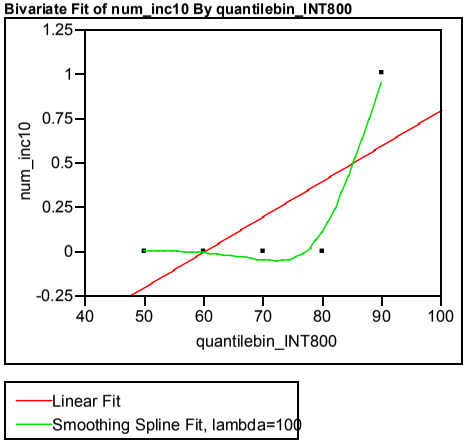
Property Damage



Drugs



Dumping



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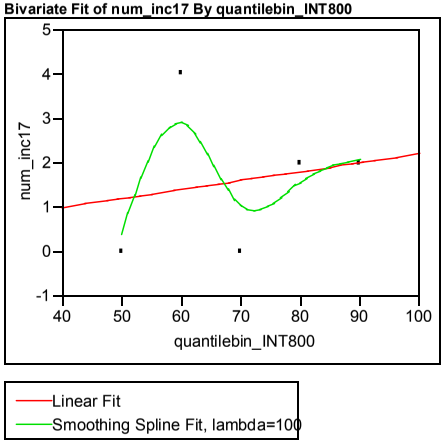
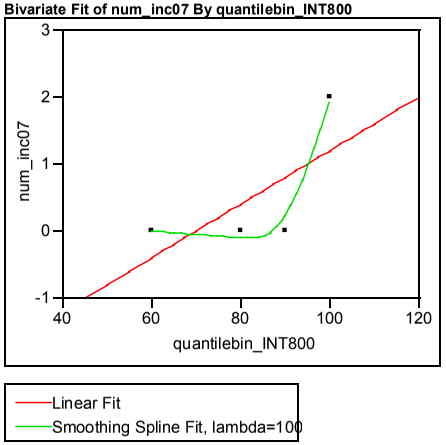
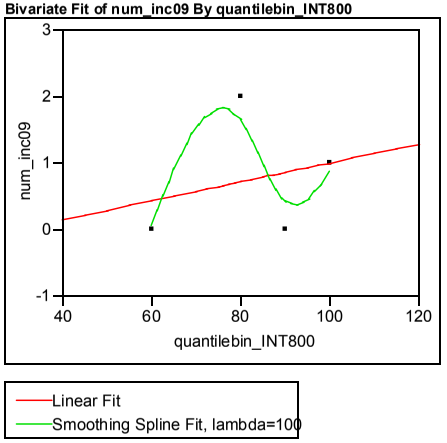


4 Tower Hamlets Street based Layout: Batty Street

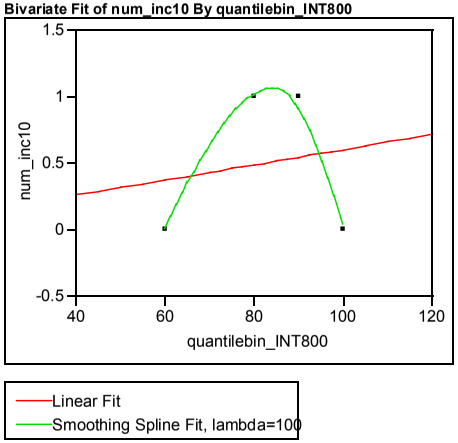
Property Damage



Drugs



Dumping



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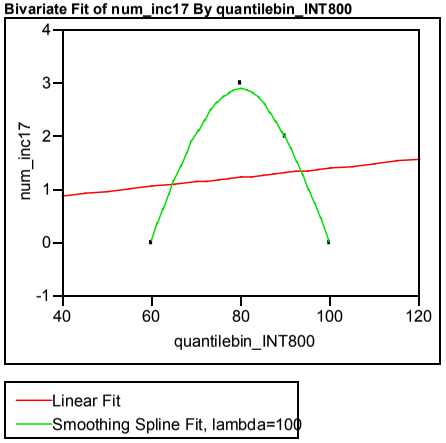
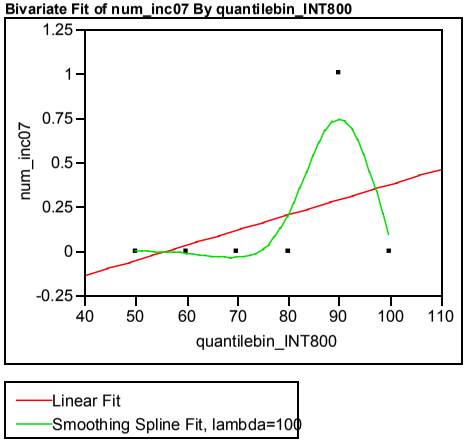
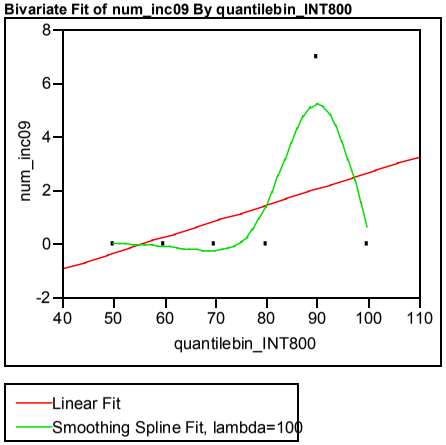


4 Tower Hamlets Street based Layout: Winkley Street

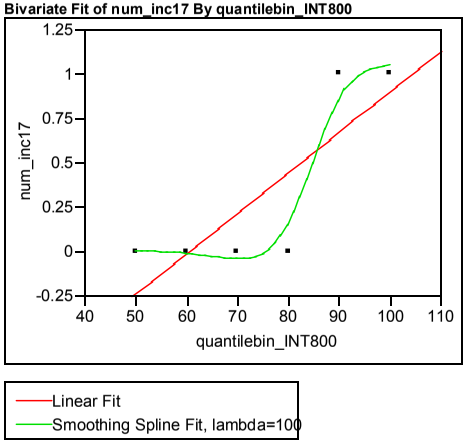
Property Damage



Drugs

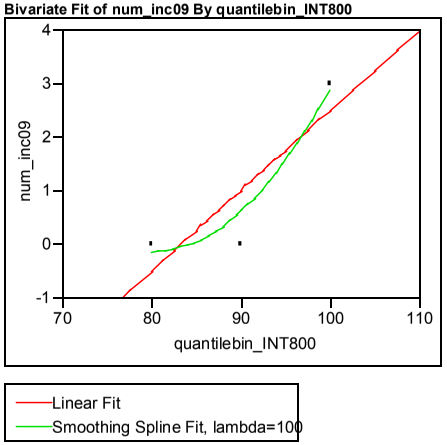


Violence

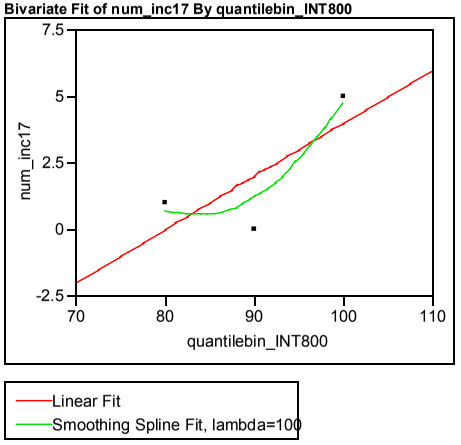


4 Tower Hamlets Street based Layout: Parfett Street

Drugs

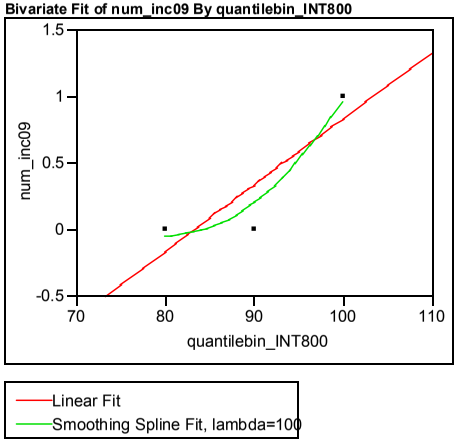


Violence

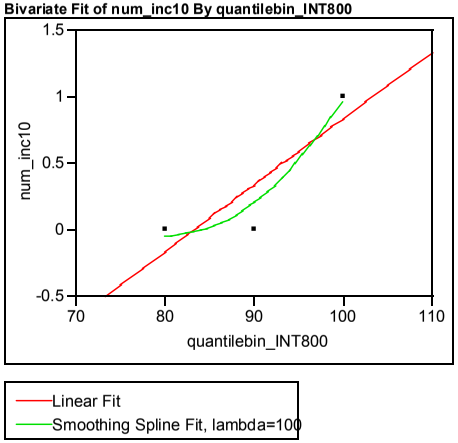


4 Tower Hamlets Street based Layout: Violet Road

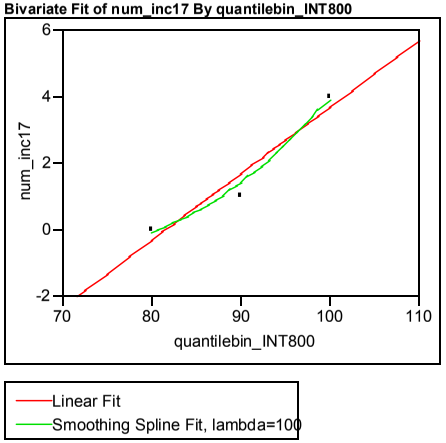
Drugs



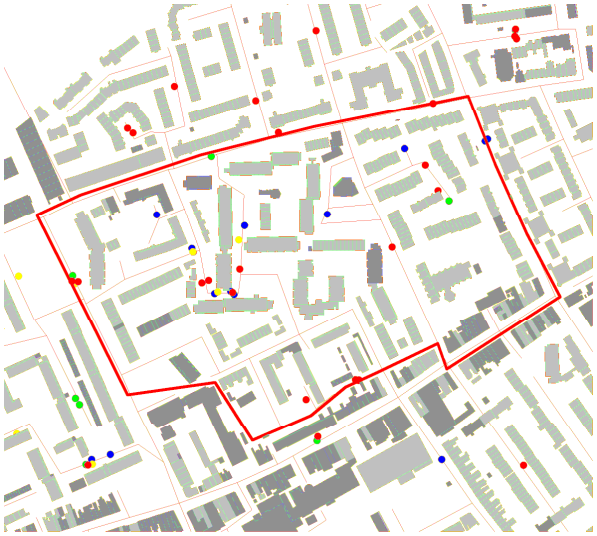
Dumping



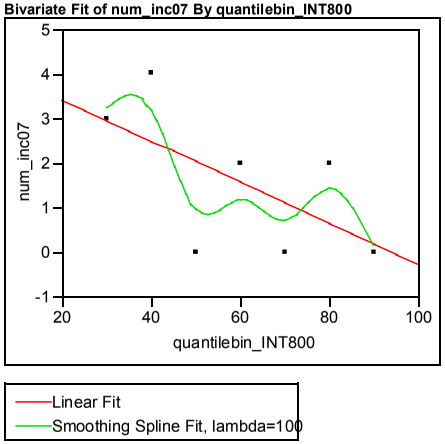
Violence



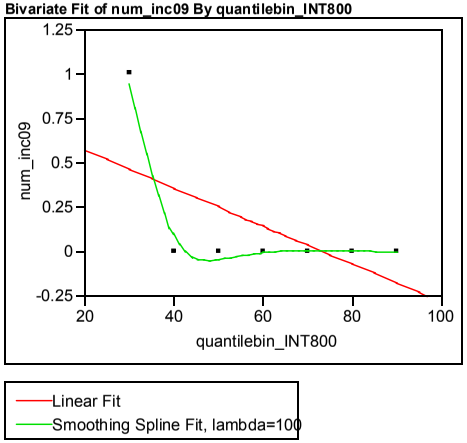
4 Tower Hamlets Estate Layout: Wright's Road



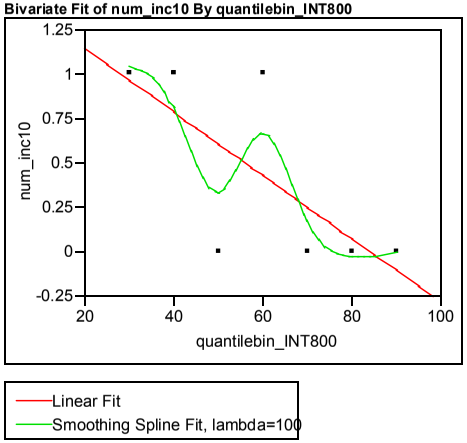
Property Damage



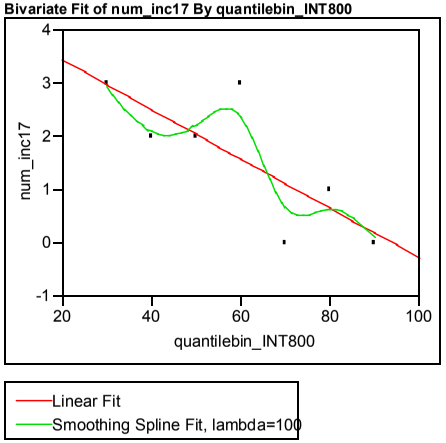
Drugs



Dumping

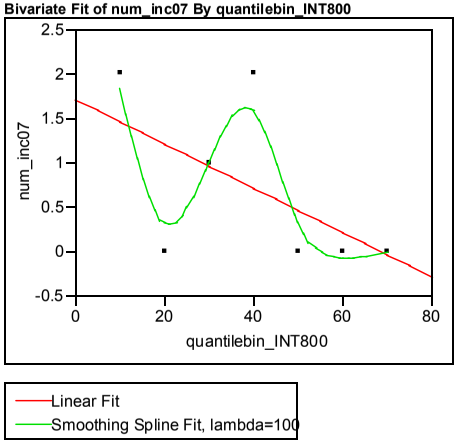


Violence

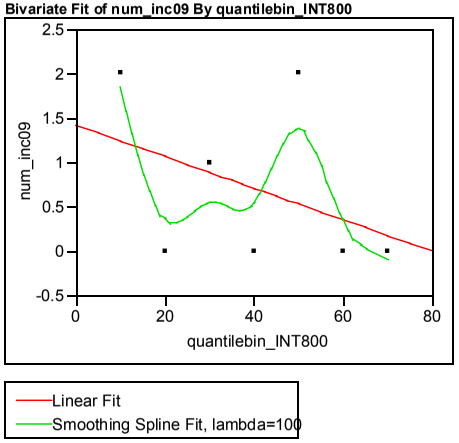


4 Tower Hamlets Estate Layout: Abbott Road

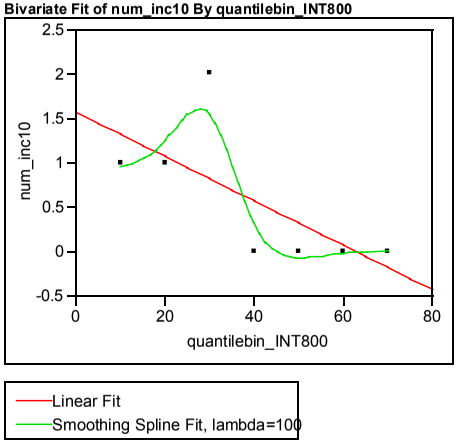
Property Damage



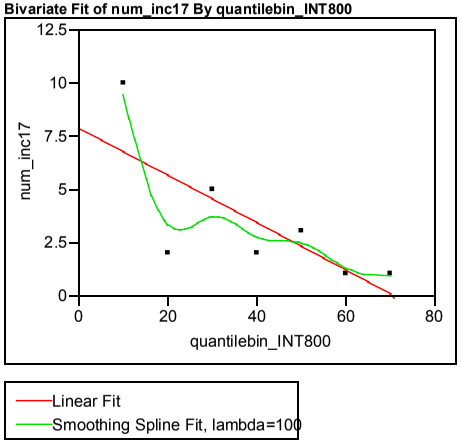
Drugs



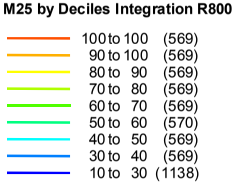
Dumping



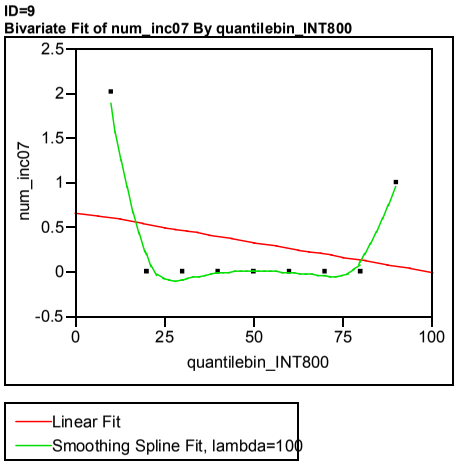
Violence



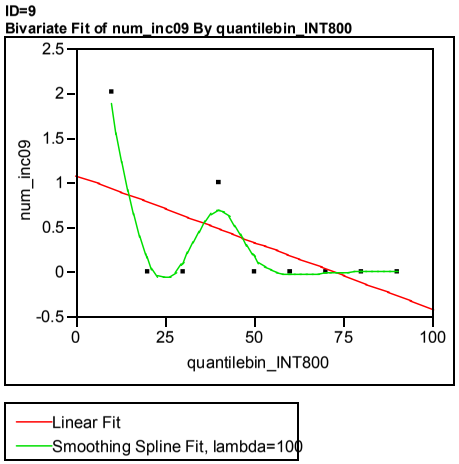
4 Tower Hamlets Estate Layout: Lefevre Walk



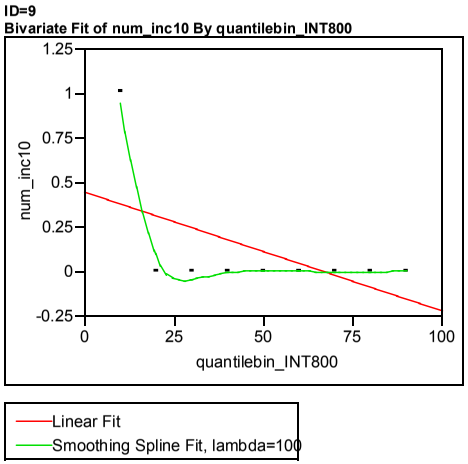
Property Damage



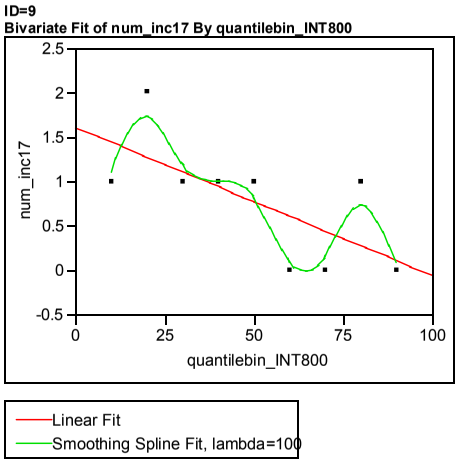
Drugs



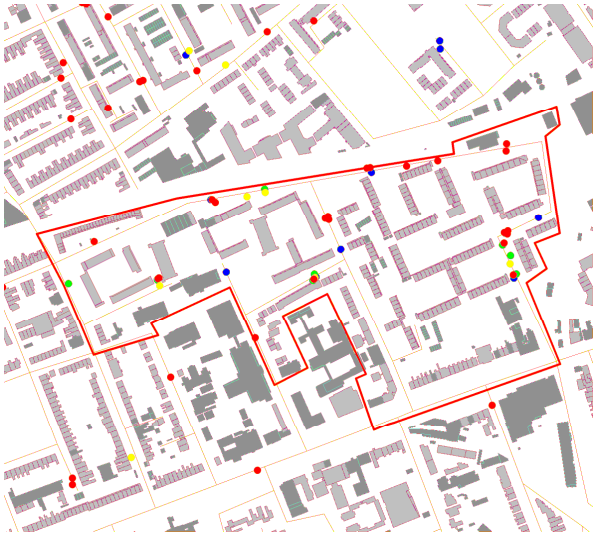
Dumping

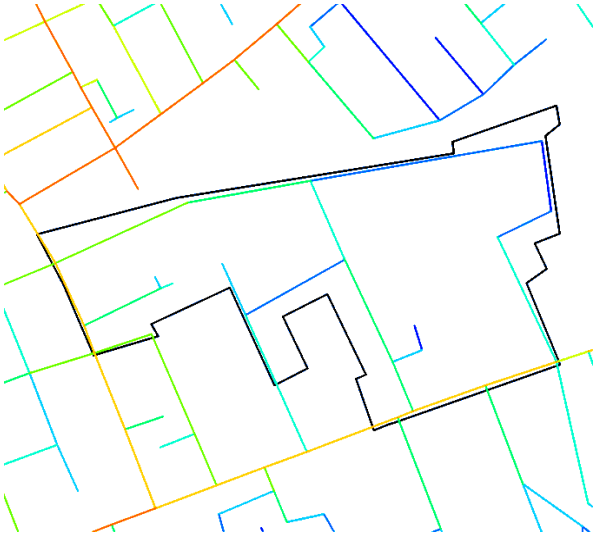


Violence

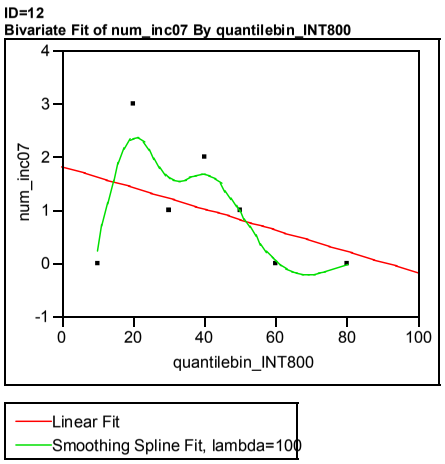


4 Tower Hamlets Estate Layout: Malmesbury Road

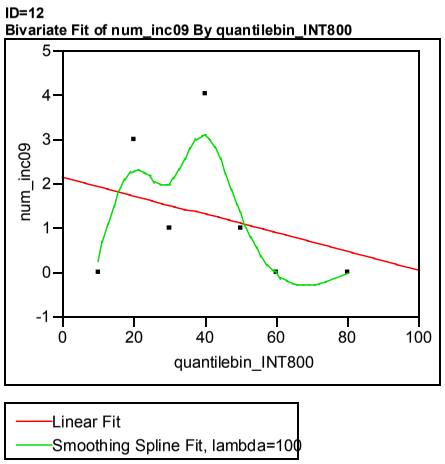




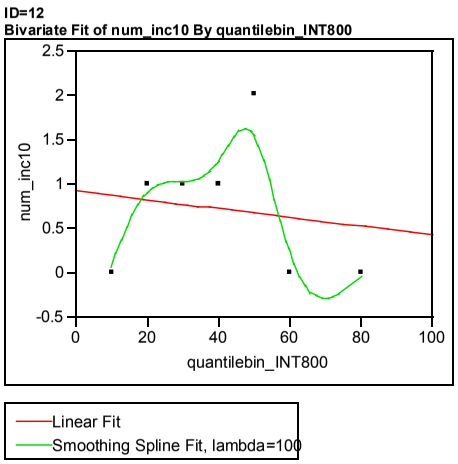
Property Damage



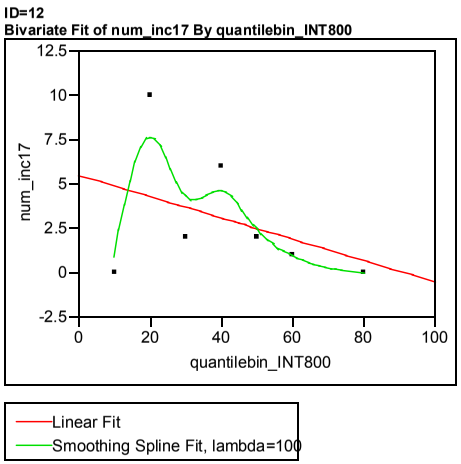
Drugs



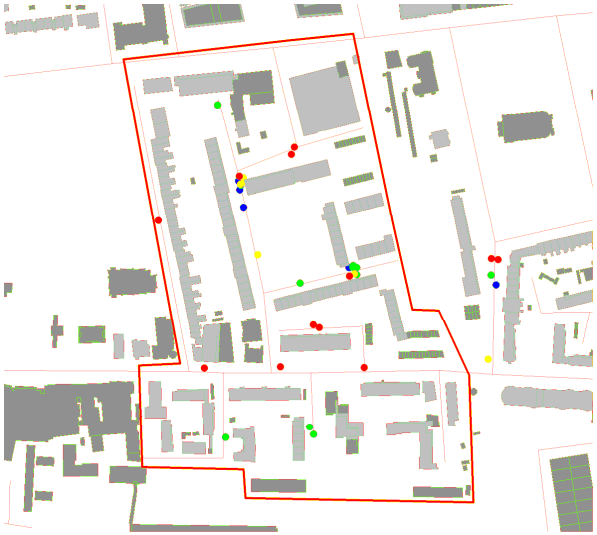
Dumping



Violence



4 Tower Hamlets Estate Layout: Smythe Street



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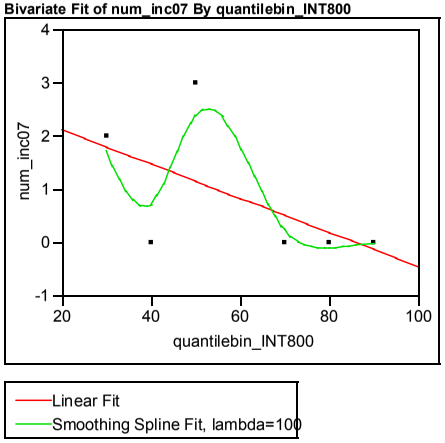

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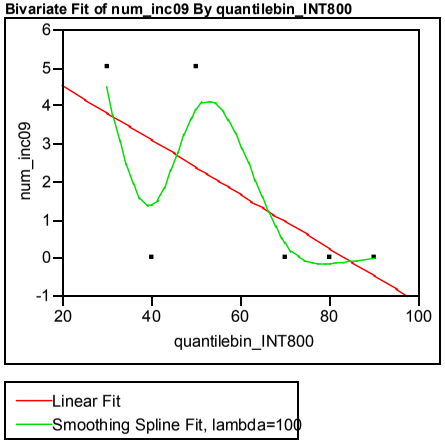

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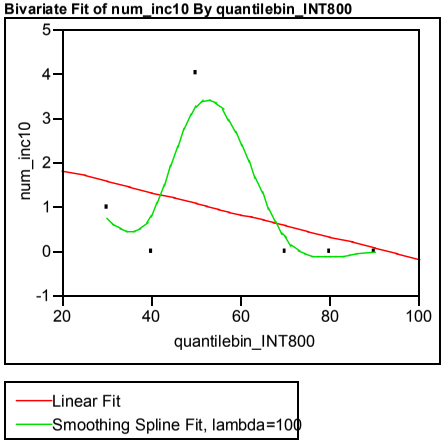

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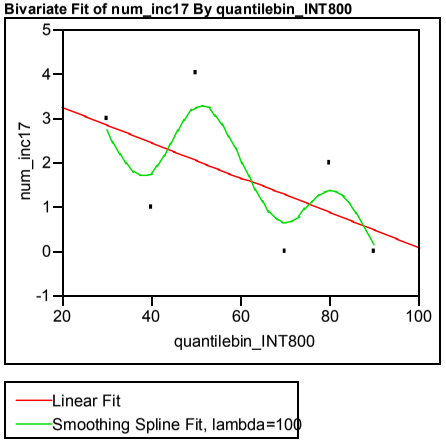
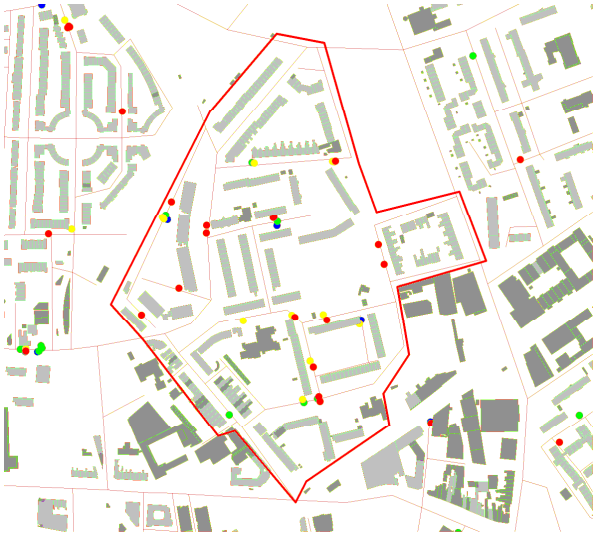
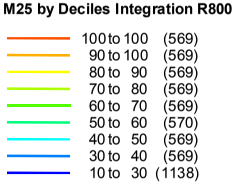
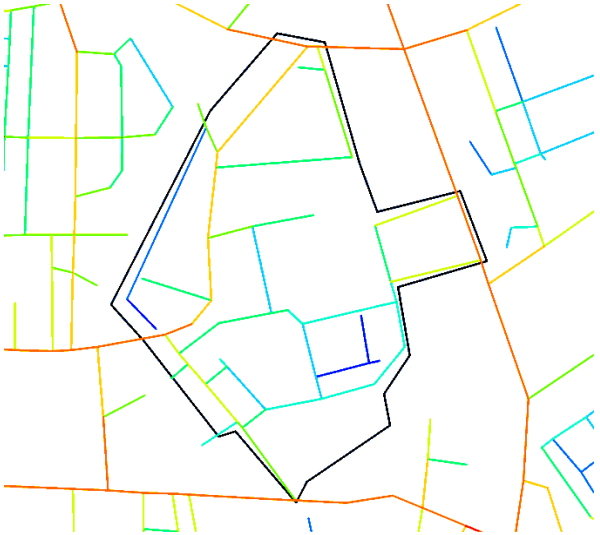


4 Tower Hamlets Estate Layout: Dora Street







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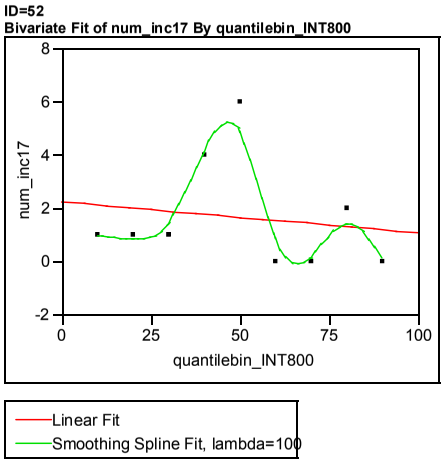
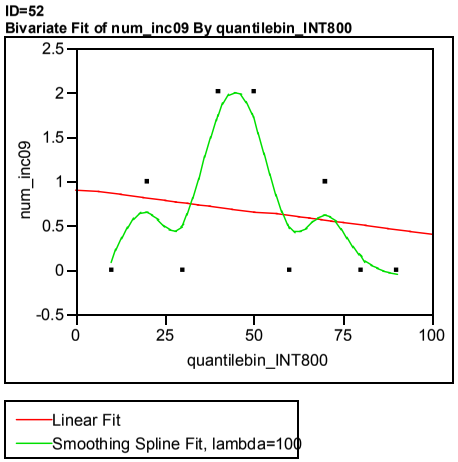


Drugs



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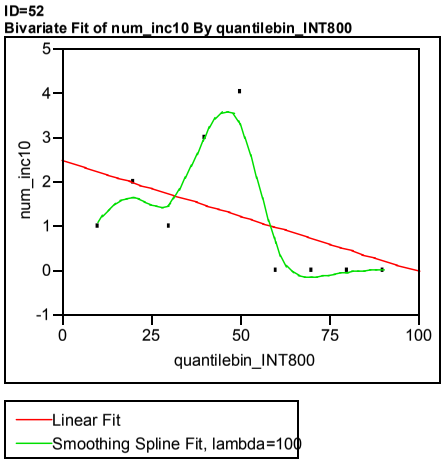

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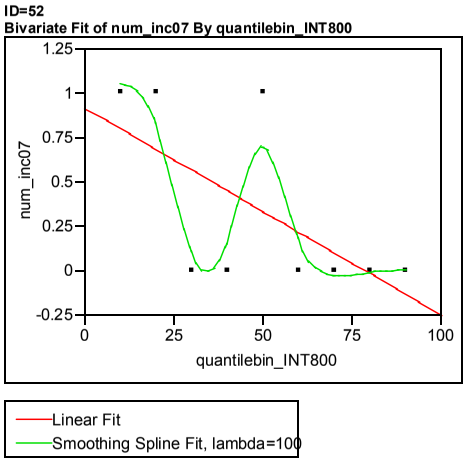
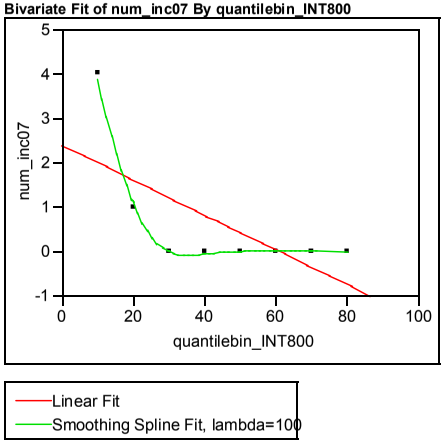


4 Tower Hamlets Estate Layout: Turner Street

Property Damage



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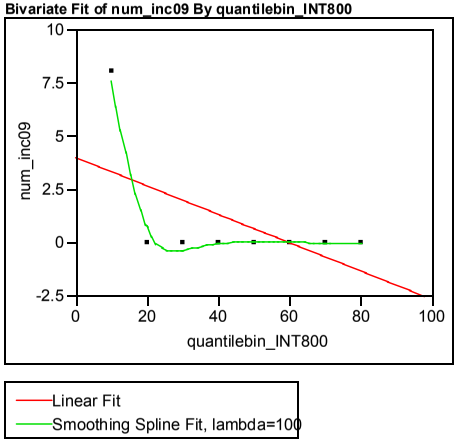

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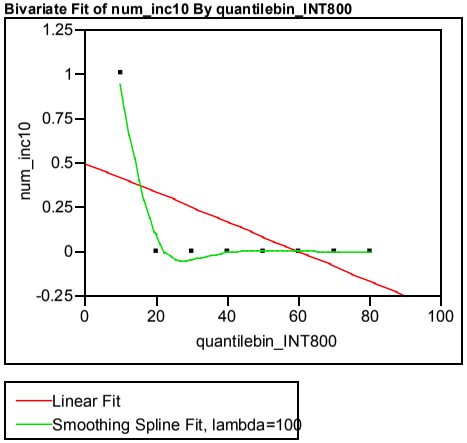

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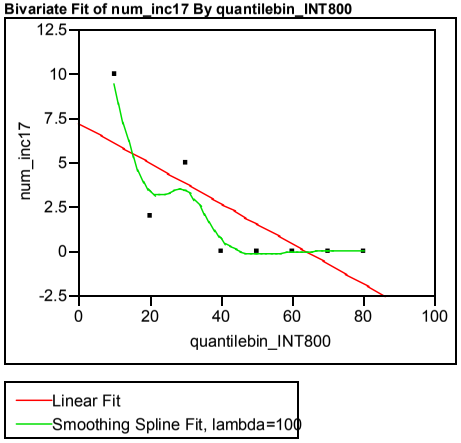
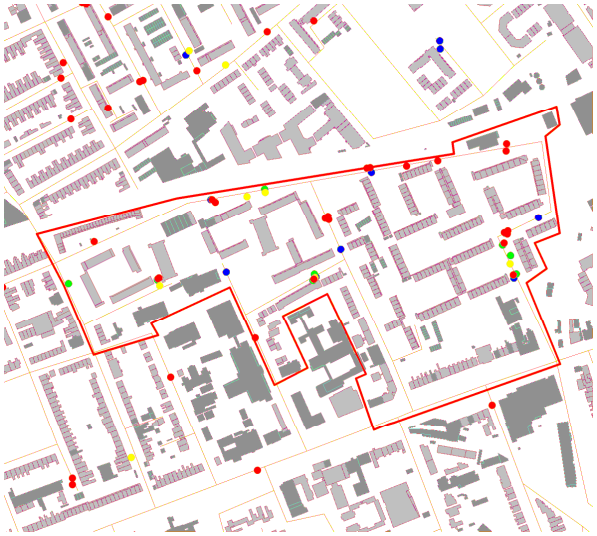


4 Tower Hamlets Estate Layout: Candy Street



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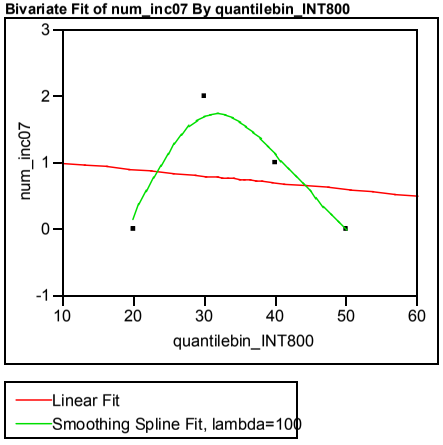

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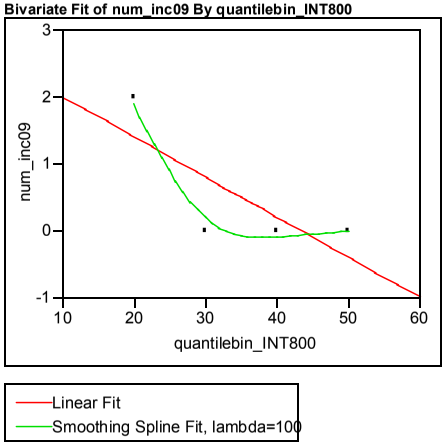
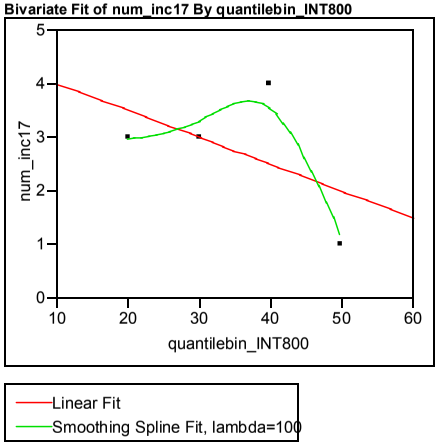
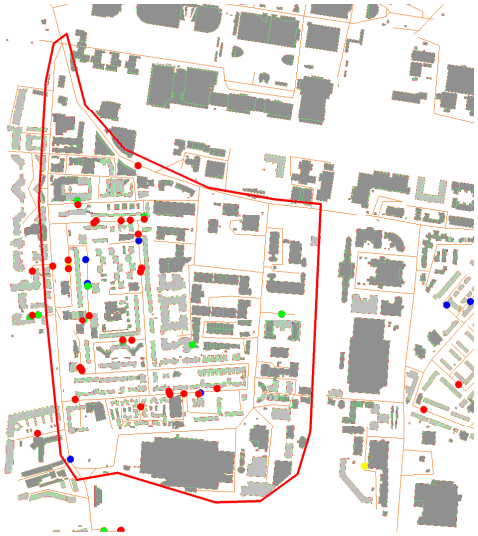
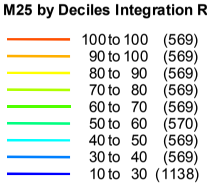


Violence



4 Tower Hamlets Estate Layout: Canary Wharf





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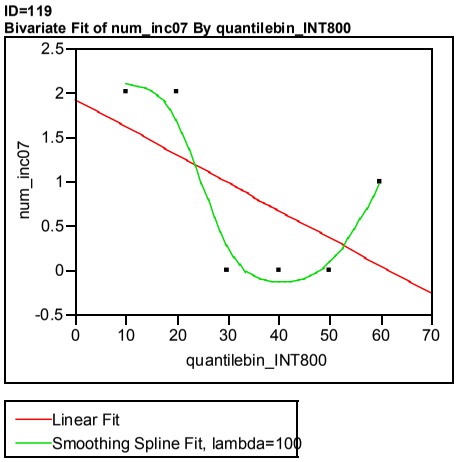

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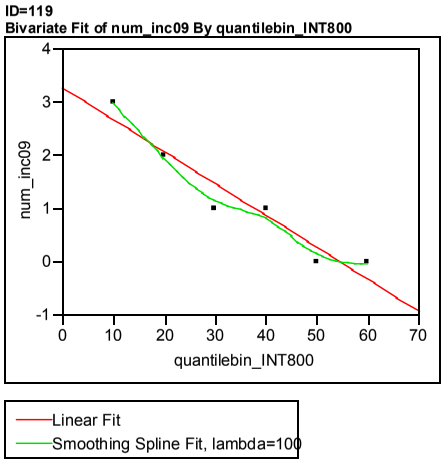

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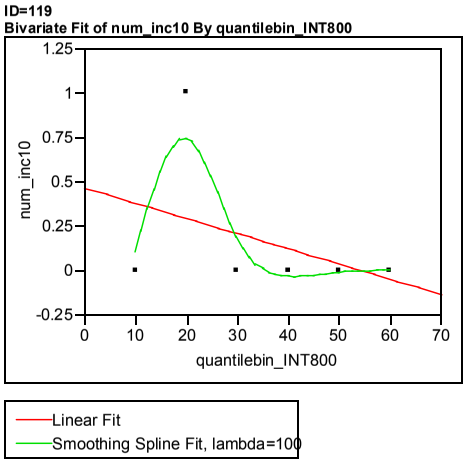

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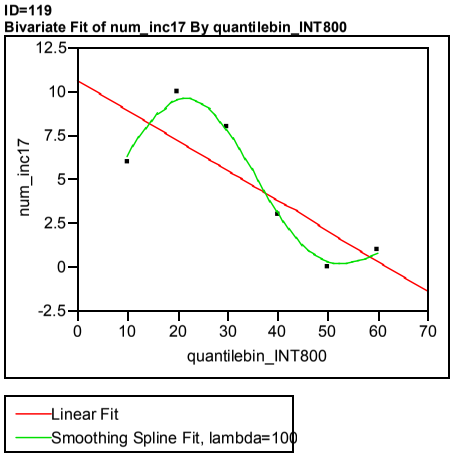
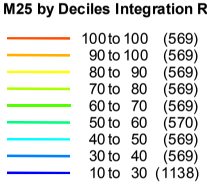


4 Tower Hamlets Estate Layout: Westferry Road



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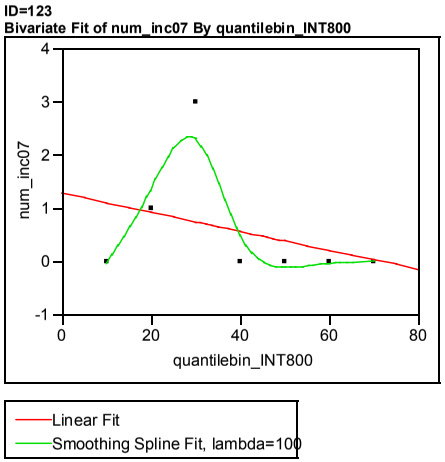

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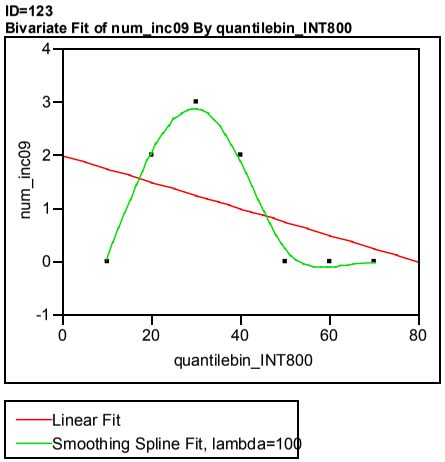

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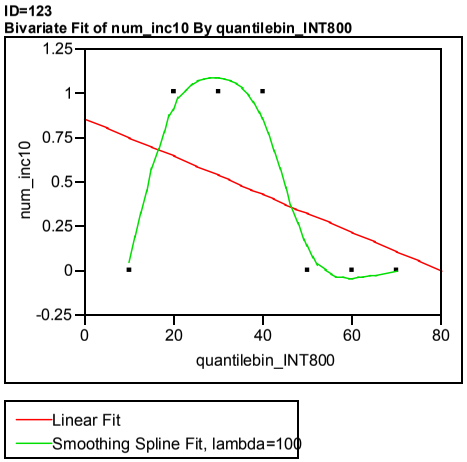

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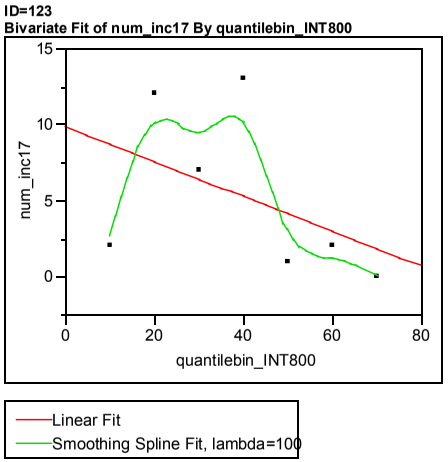
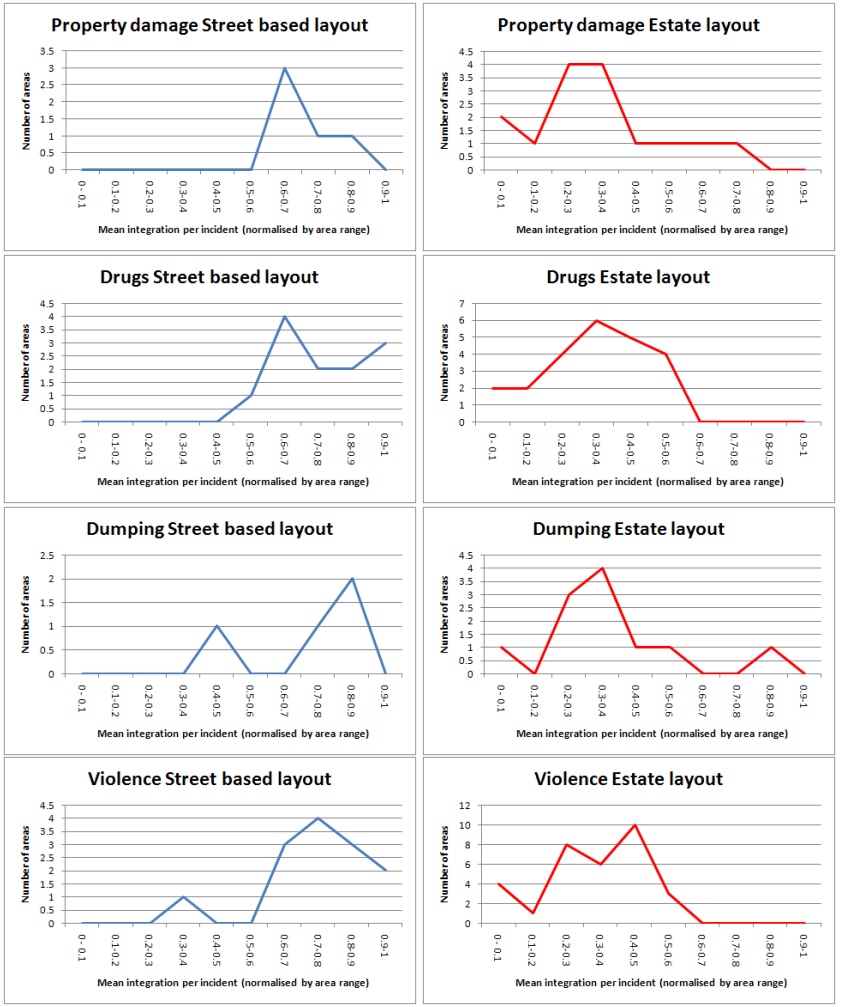


Number of areas per mean incident integration R800

Left: street based layouts, right: Estate layouts. For street based layouts, most areas have high mean values of integration for spaces where ASB occurs. Estate layout areas more often have low mean incident integration.



Number of areas per mean incident Integration R800 in street based layouts (left) and Estate layouts (right)

4 Tower Hamlets Statistics summary

ID	Area type	Prop Damage	Drugs	Dumping	Violence	Area type	Prop Damage	Drugs	Dumping	Violence
1	ST		50		64.5833333					
4						ES	30.3030303		37.5	43.3333333
12	ST	66.6666667	100		81.25					
14						ES	30.6122449	40	40	30.6122449
18	ST	66.6666667		75	75					
19	ST	80	93.4065934	85.7142857	71.4285714					
21	ST		64.2857143							
23						ES	71.875	37.5	39.5833333	39.1304348
25						ES		51.1111111		31.4814815
29						ES				21.4285714
30						ES				45.7142857
31						ES				20
34	ST		66.6666667	83.3333333	75					
42	ST				86.6666667					
45						ES				29.7619048
47	ST		66.6666667		60					
49						ES	20	16.6666667	26.6666667	31.6666667
50	ST		82.5		90					
54						ES		52.3809524		
58	ST		100		83.3333333					
59						ES	11.1111111			33.3333333
60						ES	61.9047619	54.2857143		42.8571429
62						ES	20.8333333	43.75	32.9545455	44.1666667
63						ES	3.7037037	25.9259259		22.2222222
64						ES	50	29.5454545	37.5	34.2105263
65						ES				44.4444444
67						ES	0	0		9.82142857
70						ES			25	53.5714286
71	ST		66.6666667		75					
73						ES		38.6363636		51.7857143
81	ST				90					
84	ST		75							
85						ES		44.4444444		8.33333333
93	ST		85.7142857	47.6190476	67.3469388					
96						ES		38.7755102	28.5714286	14.2857143
97						ES		57.1428571		25.7142857
98						ES	34.375	17.5	2.5	6.25
99						ES		20.8333333		
101						ES	39.5833333	23.0769231		29.7619048
107	ST	66.6666667			33.3333333					
108						ES	44.4444444	41.1111111		44.4444444
112						ES				22.2222222
114						ES		32		43.5294118
117						ES		41.6666667		48.7179487
121						ES		37.5		53.8461538
125						ES			86.6666667	44
128						ES		33.3333333		
129						ES			58.3333333	
136						ES	25			
137						ES		5.71428571		0
143						ES				45
144						ES	26.6666667			25.4545455
Average		70.00000003	77.35514486	72.91666665	73.30324437		31.36084197	34.03915884	37.75236128	32.53443109

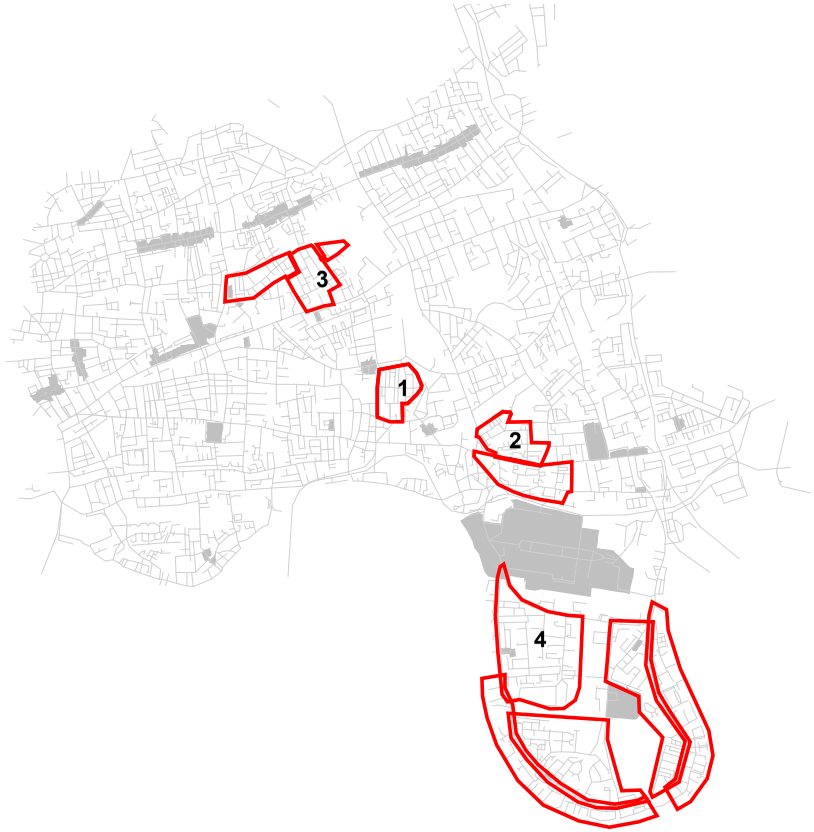
Mean Integration R800 for ASB incidents per area in street based layouts (left) and Estate layouts (right)

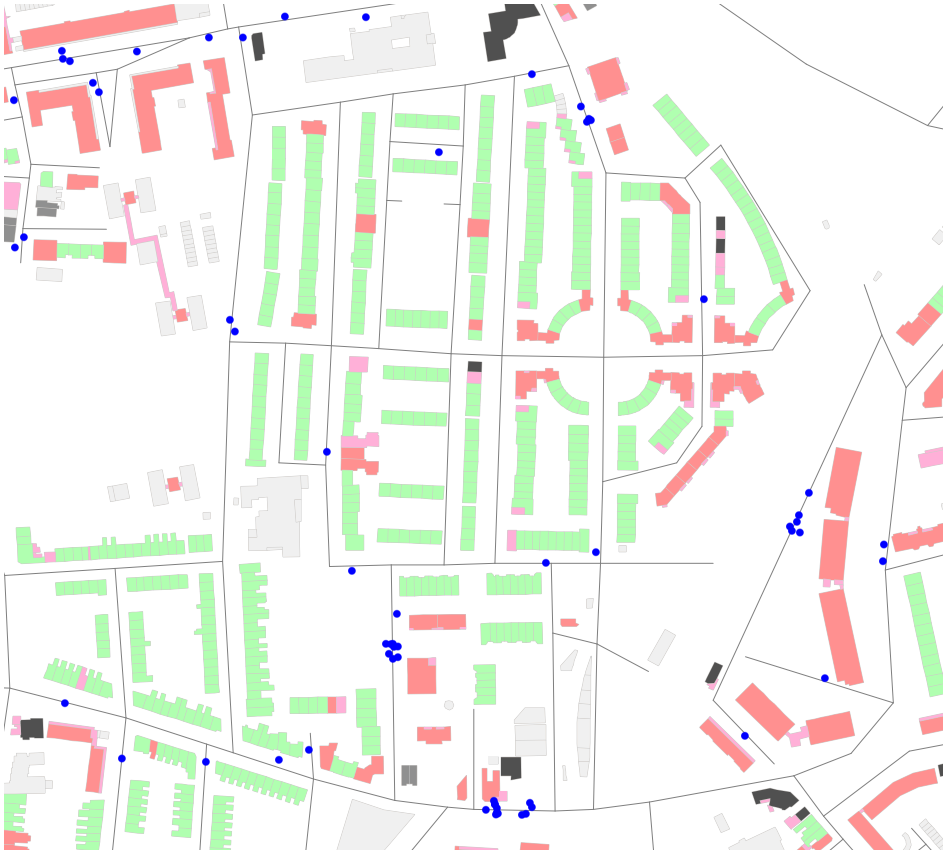
Mean integration R800 for ASB incidents per area

Displayed are mean values for all 124 areas in Tower Hamlets. Street based layouts are in the left column, estate layouts in the right column. Green shades indicate a figure above, red below the average integration value. Estate layouts tend to have a lower than average integration value.

5 Tower Hamlets Case Studies

Contents





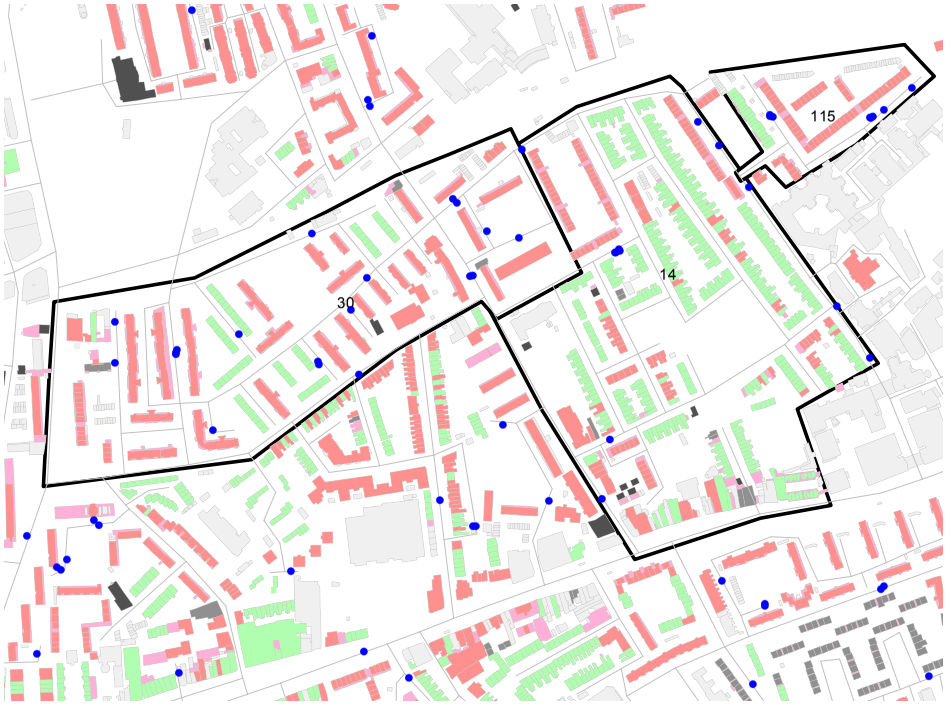
Glasworthy Ave – Barnes Road
Layout type: Street based layout

The layout is irregular with a few cul de sacs. The constitutedness of the road by the buildings breaks down in some places.

Incidents tend to happen in places where the constituting building pattern breaks down, and on the edges of the area.

Dwellings Type

Detached	(514)
Flat	(9216)
Flats (communal)	(11076)
Semi-Detached	(928)
Terraced	(14972)



Three Neighbourhoods north of Mile End Road
Layout type: Street based layout (Area 14, middle) and Estate layout (Areas 30 and 115 - East and West)

Incidents (Violence) tend to stay out of the street based layouts, but emerge into the surrounding areas.

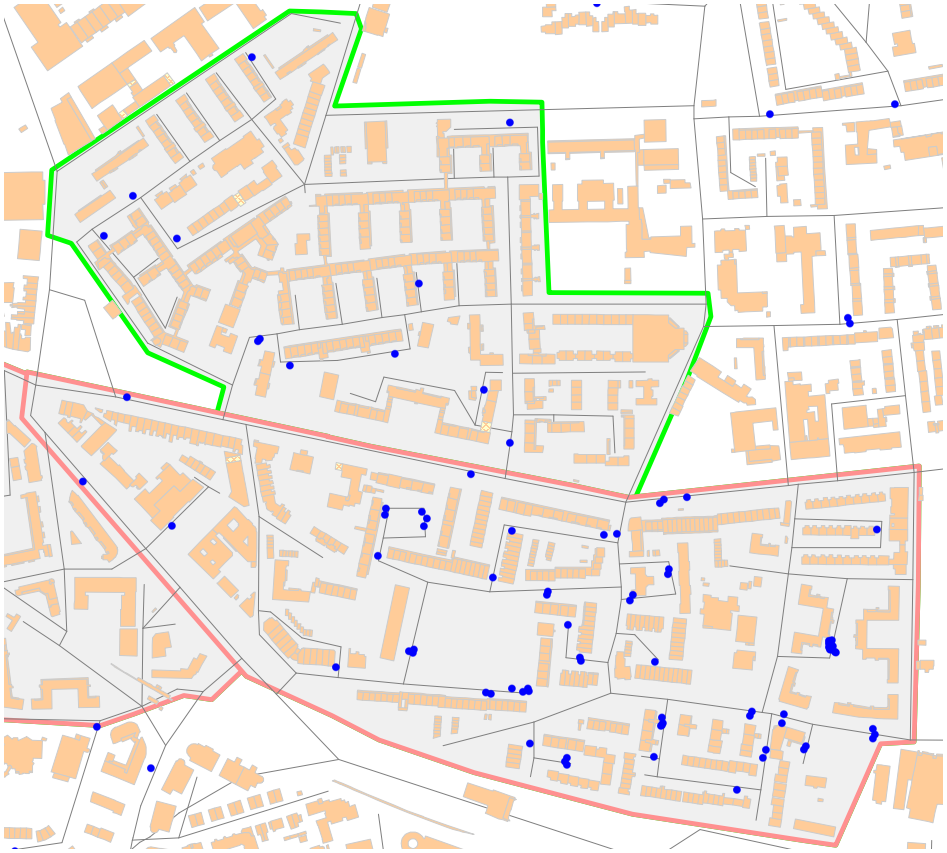
Ratio Incidents per sq m:

Area 14:	0.09	/ 1000
Area 30:	0.18	/ 1000
Area 115:	0.41	/ 1000

All three areas have similar socio-economic conditions.

Dwellings Type

Detached	(514)
Flat	(9216)
Flats (communal)	(11076)
Semi-Detached	(928)
Terraced	(14972)



Areas around E. India Dock Road

The three areas in the south are hotspots for nearly all kinds of incidents. The area in the north has much fever incidents.

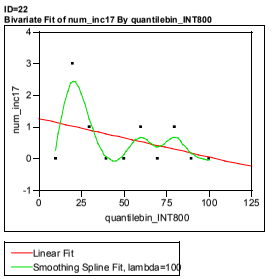
All areas have similar socio-economic conditions.

Although there are differences in the amount of incidents, we can still see that the distribution pattern of incidents is still similar in all four neighbourhoods.
All street layouts are treelike broken-up structures; and incidents tend to happen in the less integrated segments in the middle of the neighbourhoods.

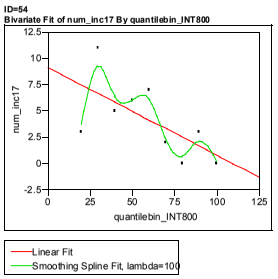
The streets in the northern area are much more defined by the buildings. This makes the layout much more structured and dense. There exists a well defined circulation route for both pedestrians and vehicles.

The street layout in the southern areas is much more fragmented and broken up. The buildings pattern is fragmented, there are many unconstituted street segments.

Violence incidents in Area 22 (North)



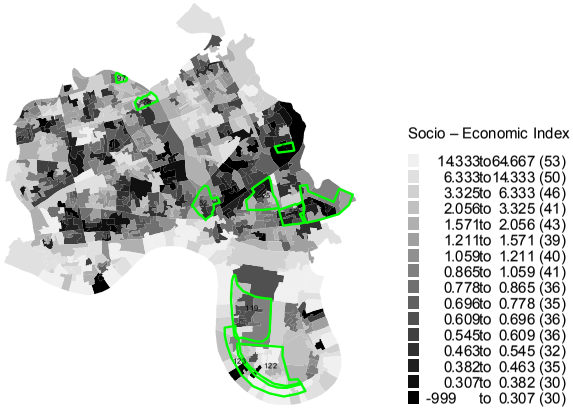
Violence incidents in Area 54 (South)

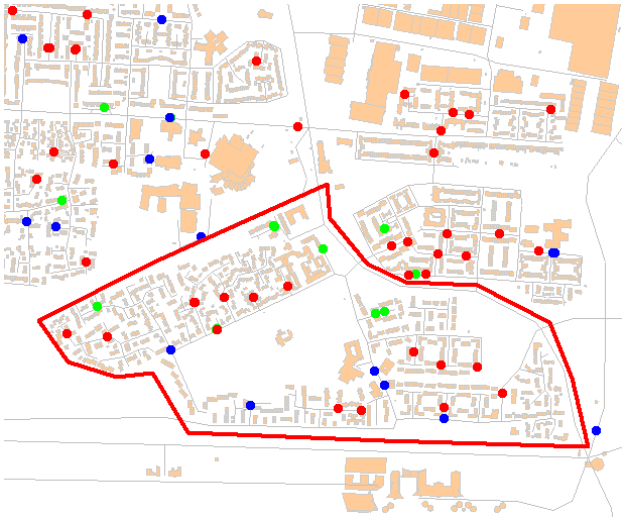


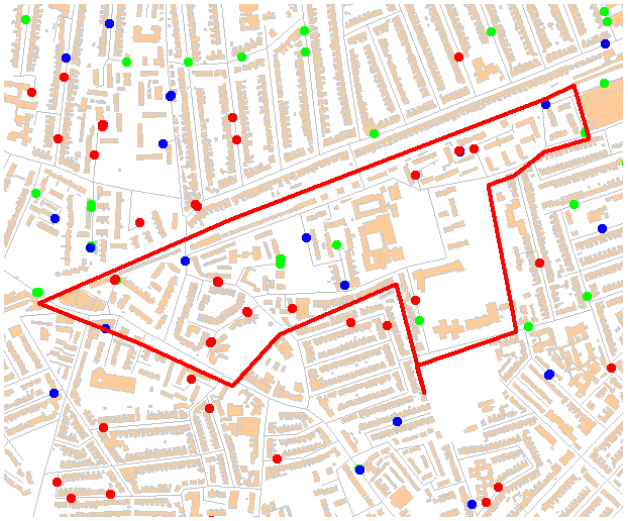
Isle of Dogs
Layout type: Estate layout

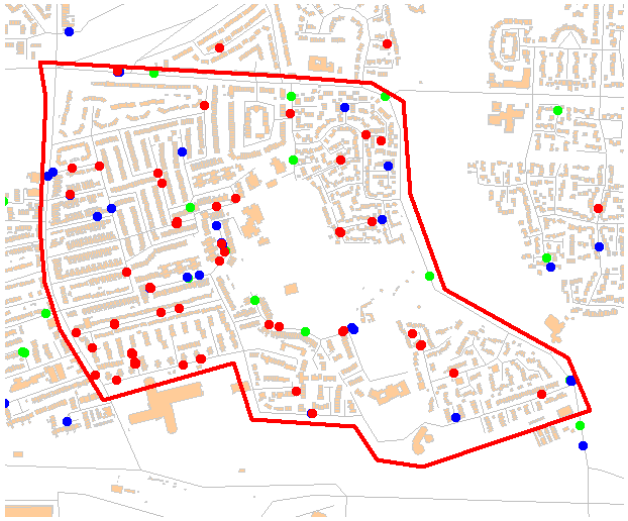
Although socio-economic conditions are better than average, the isle of dogs is a hotspot for several kinds of ASB, especially Motor-Vehicle crime.

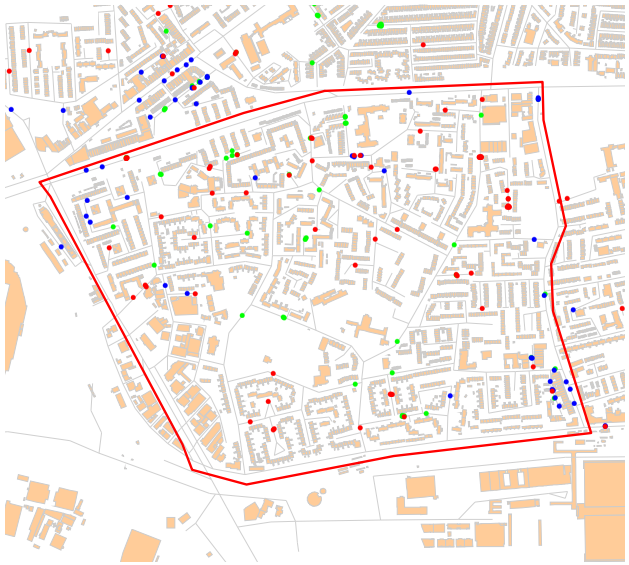
The street layout is tree-like and broken up. Incident distribution plots show that incidents are mainly happening on the less integrated roads, in the middle of the residential areas.



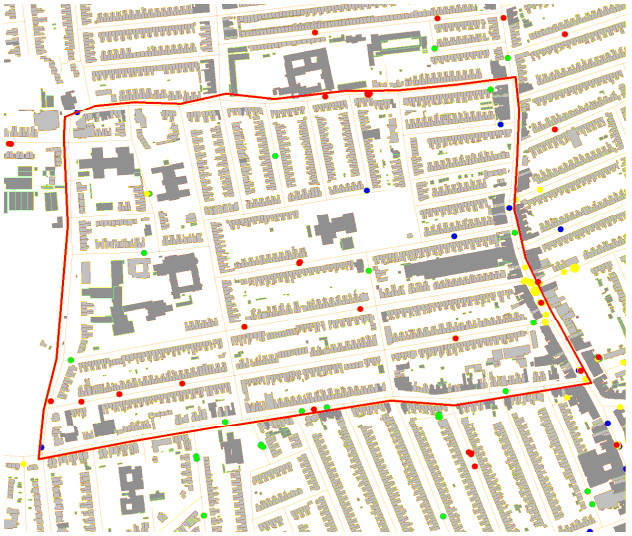




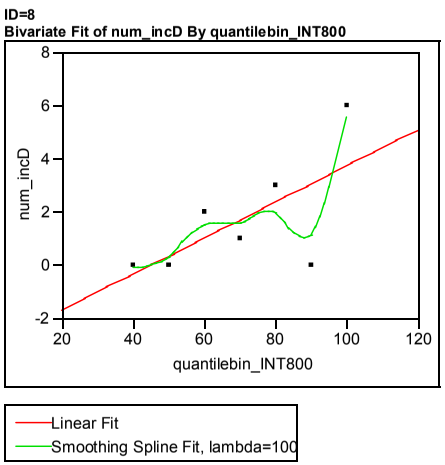




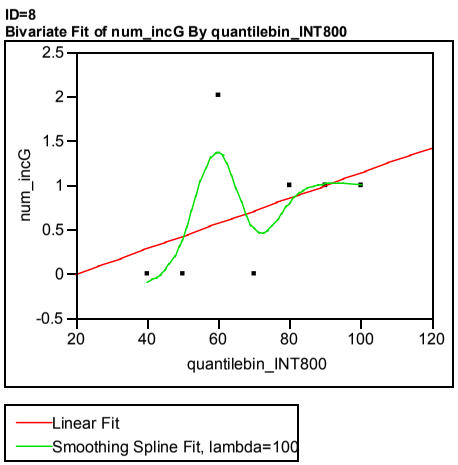
6 Newham Street Based Layout: Upton Park



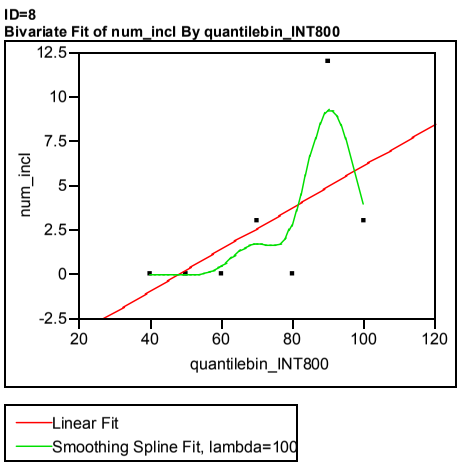
Drugs



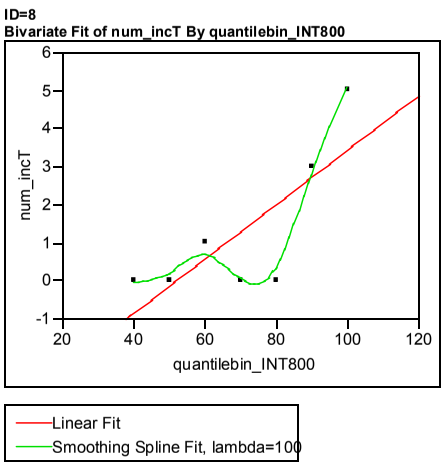
Graffiti



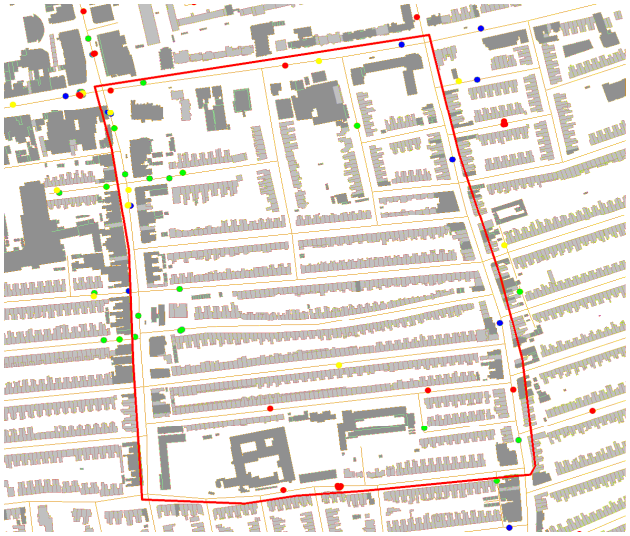
Violence



Theft



6 Newham Street Based Layout: Vale Road



Dwellings Type

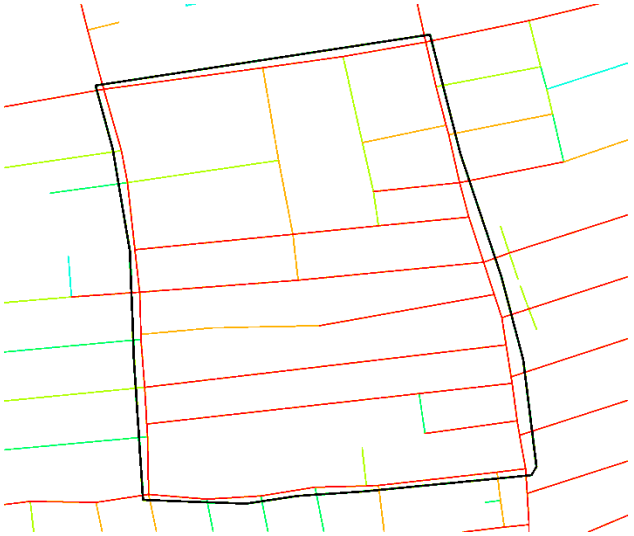
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

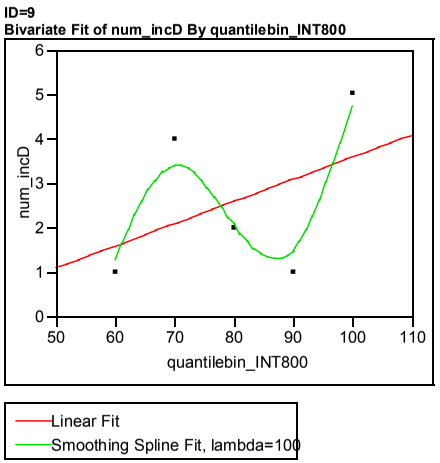
- Theft
- Drugs
- Prostitution
- Violence

M25 by Deciles Integration R800

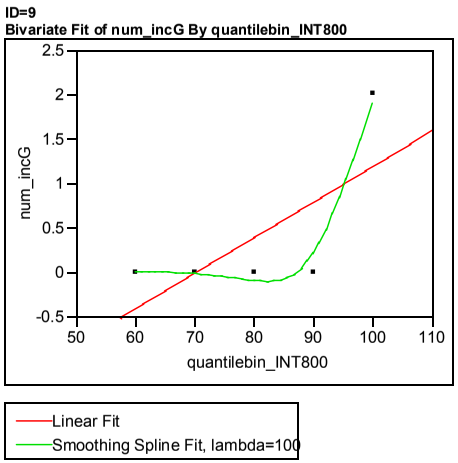
100 to 100	(569)	
90 to 100	(569)	
80 to 90	(569)	
70 to 80	(569)	
60 to 70	(569)	
50 to 60	(570)	
40 to 50	(569)	
30 to 40	(569)	
10 to 30	(1138)	



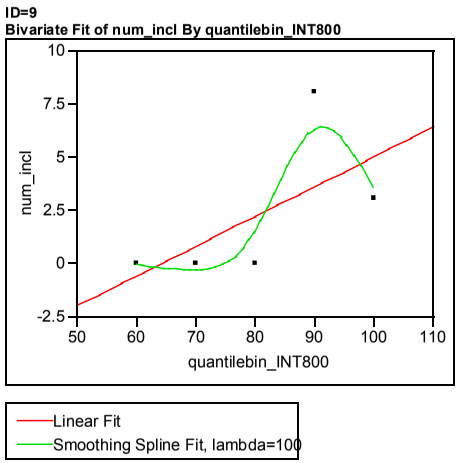
Drugs



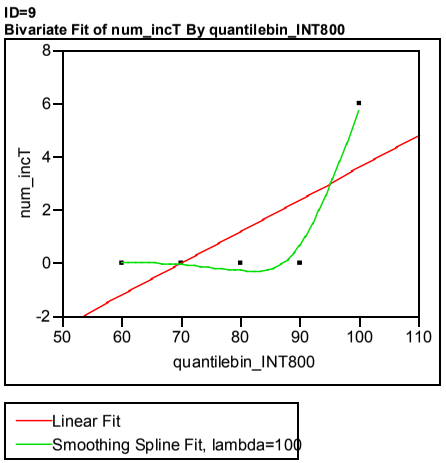
Graffiti



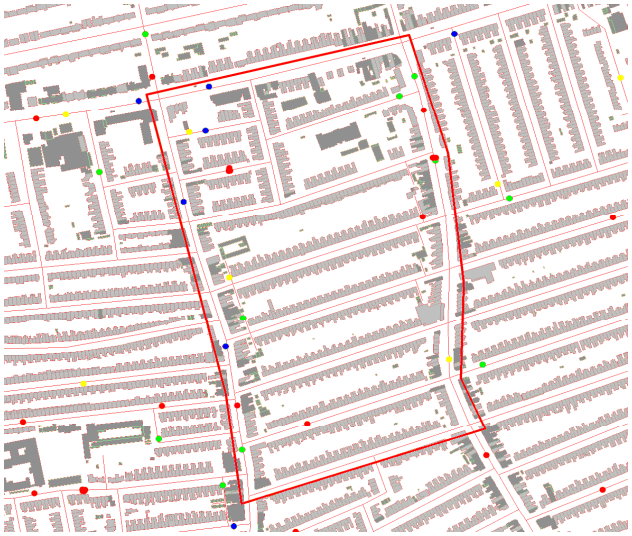
Violence



Theft



6 Newham Street Based Layout: Henderson Road



Dwellings Type

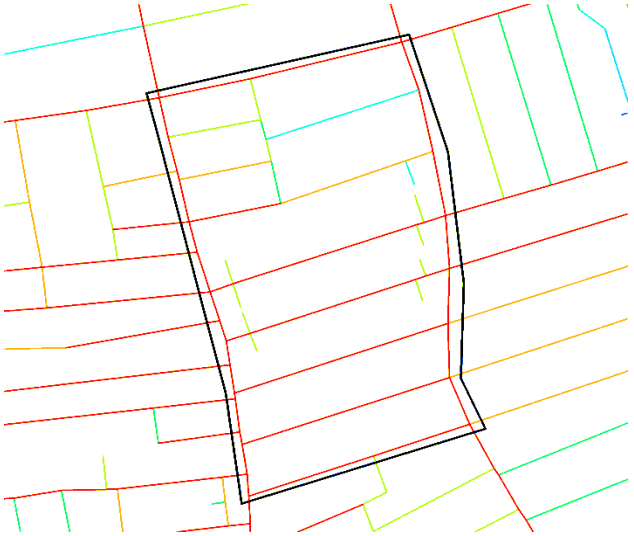
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

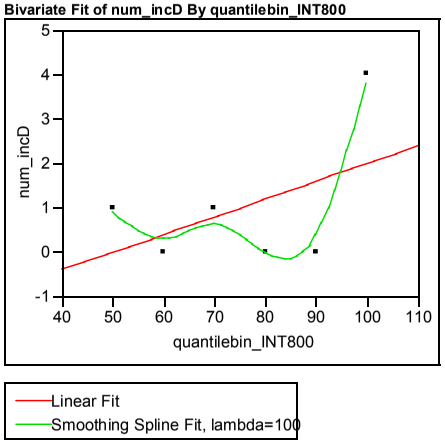
- Theft
- Drugs
- Prostitution
- Violence

M25 by Deciles Integration R800

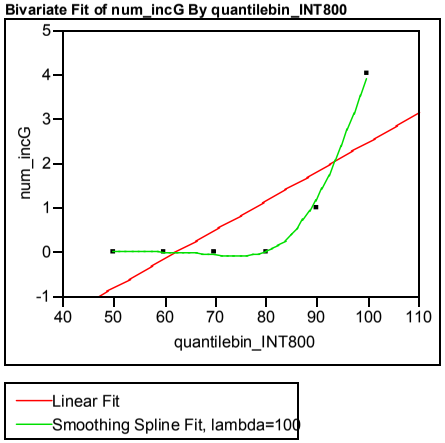
100 to 100	(569)
90 to 100	(569)
80 to 90	(569)
70 to 80	(569)
60 to 70	(569)
50 to 60	(570)
40 to 50	(569)
30 to 40	(569)
10 to 30	(1138)



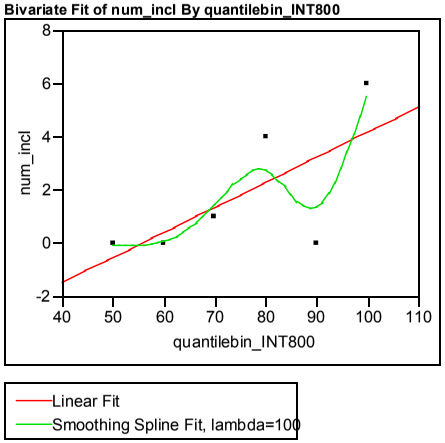
Drugs



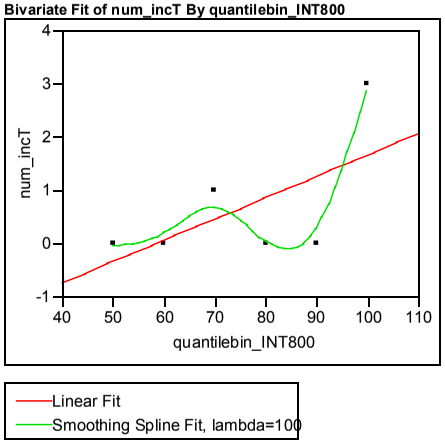
Graffiti



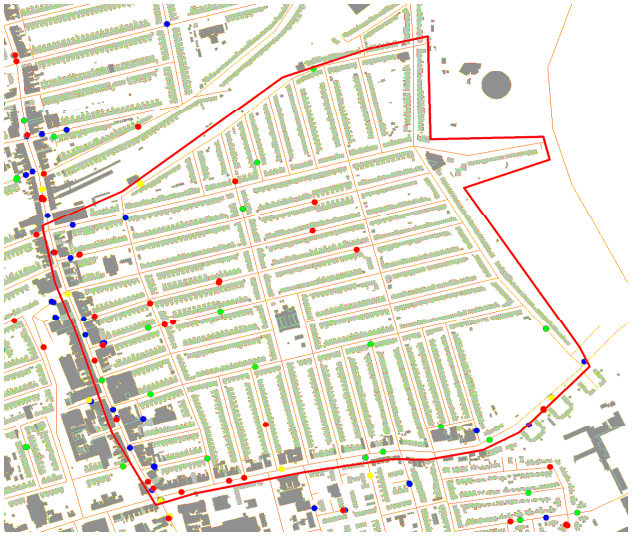
Violence



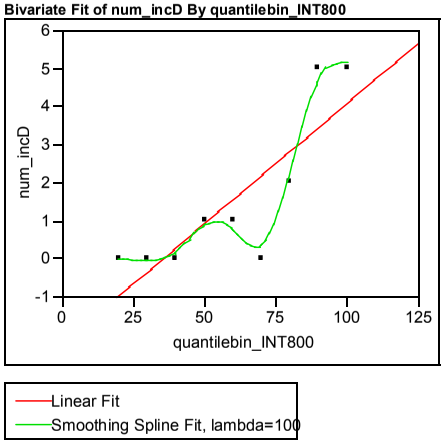
Theft



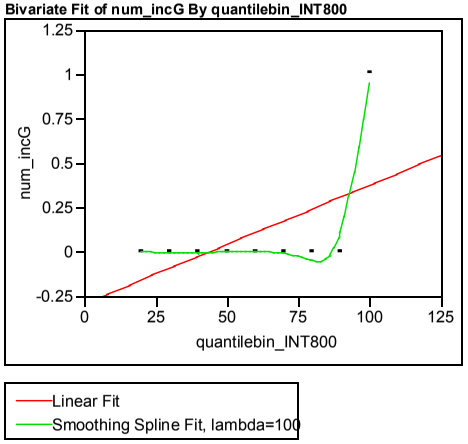
6 Newham Street Based Layout: Atmore Road



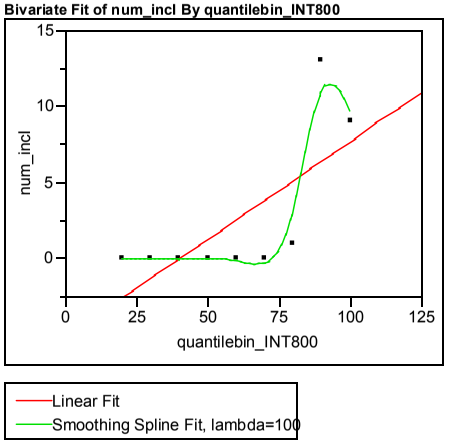
Drugs



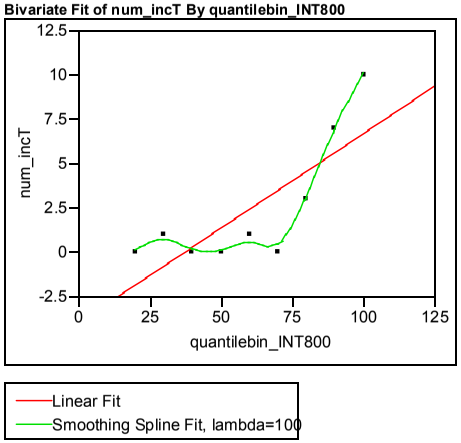
Graffiti



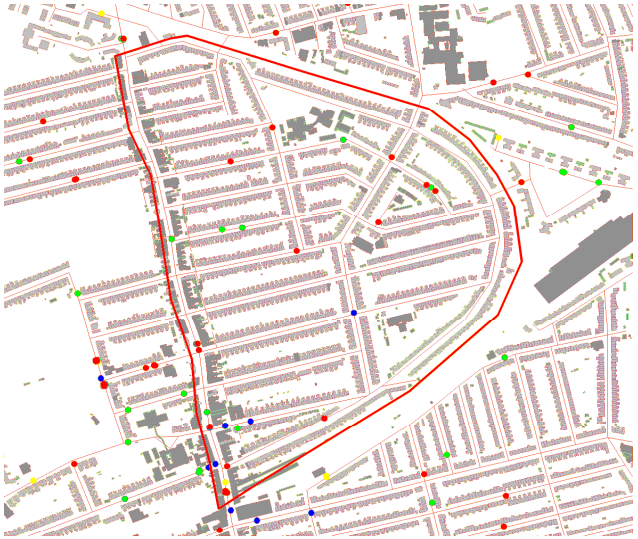
Violence



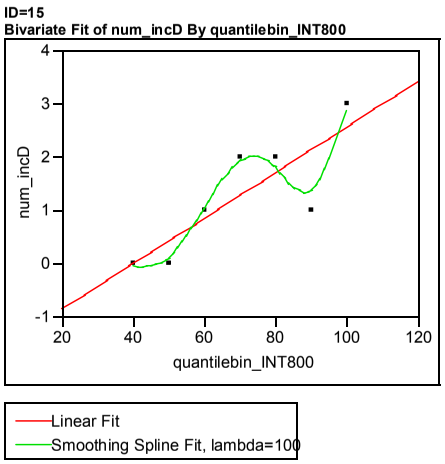
Theft



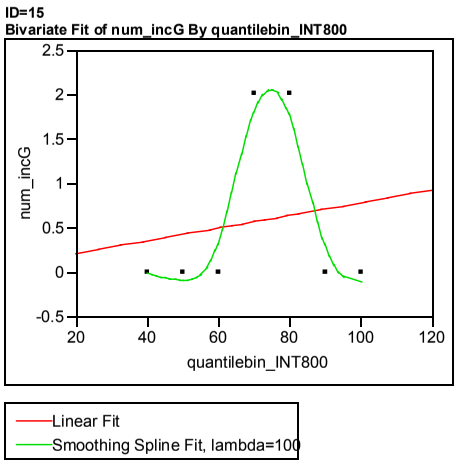
6 Newham Street Based Layout: Browning Road



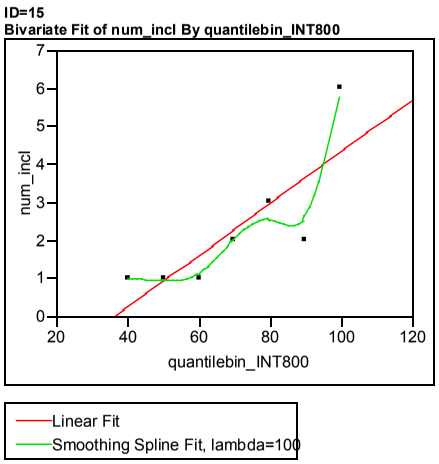
Drugs



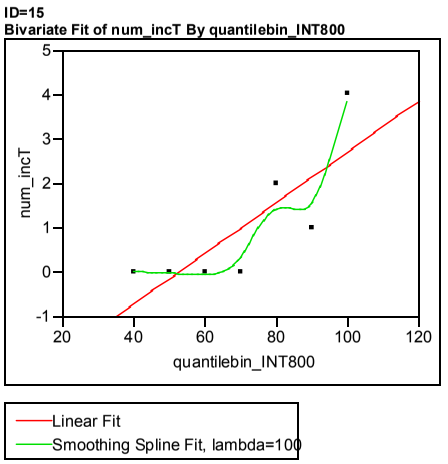
Graffiti



Violence



Theft



6 Newham Street Based Layout: Haldane Road

Dwellings Type

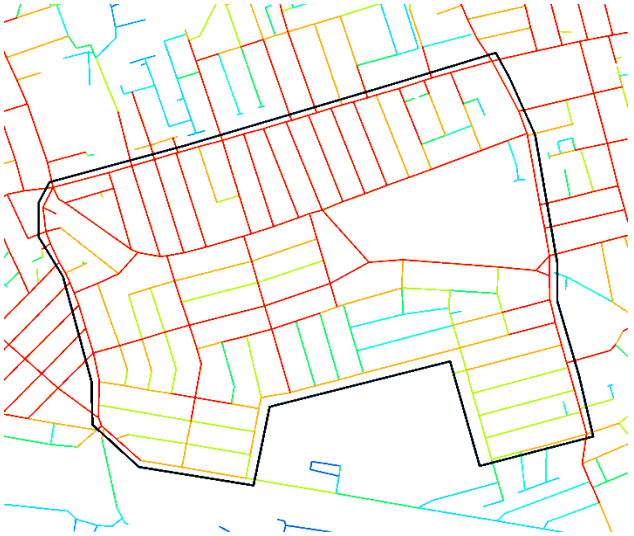
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

- Theft
- Drugs
- Prostitution
- Violence

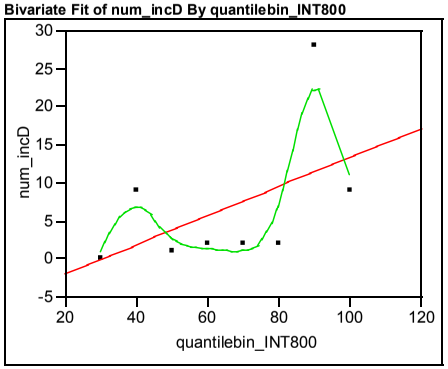
M25 by Deciles Integration R800

100	to 100	(569)
90	to 100	(569)
80	to 90	(569)
70	to 80	(569)
60	to 70	(569)
50	to 60	(570)
40	to 50	(569)
30	to 40	(569)
10	to 30	(1138)



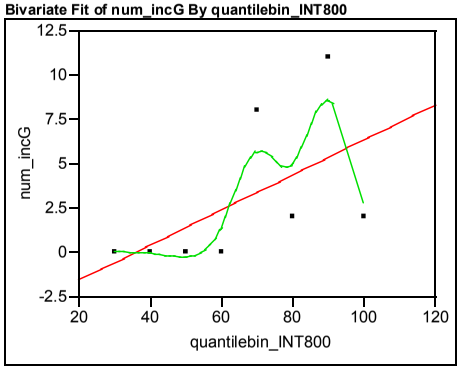
Drugs

ID=29
Bivariate Fit of num_incD By quantilebin_INT800



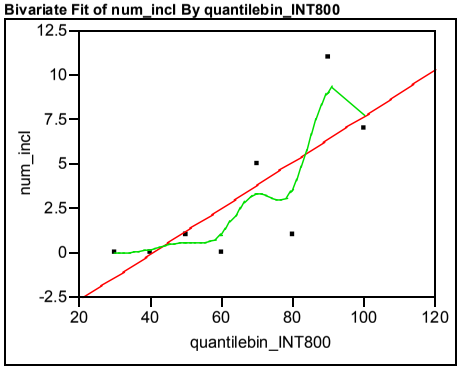
Graffiti

ID=29
Bivariate Fit of num_incG By quantilebin_INT800



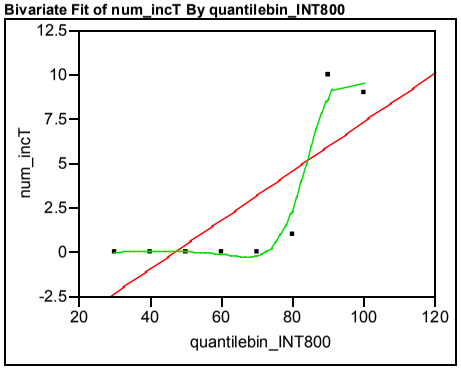
Violence

ID=29
Bivariate Fit of num_incl By quantilebin_INT800

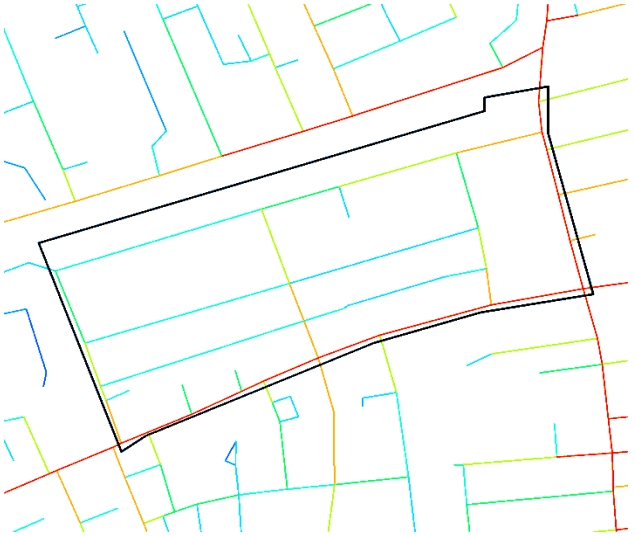


Theft

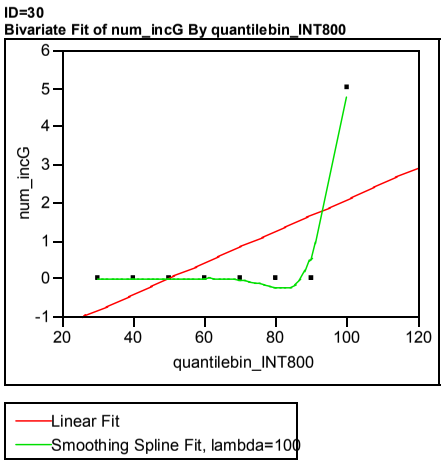
ID=29
Bivariate Fit of num_incT By quantilebin_INT800



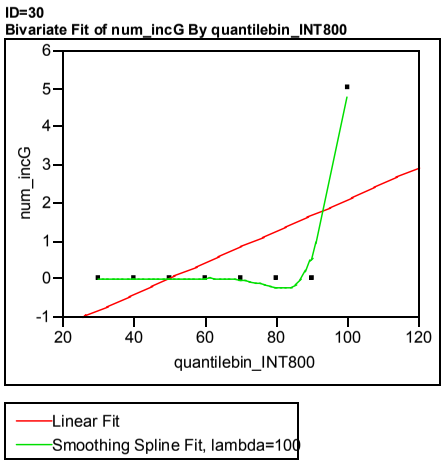
6 Newham Street Based Layout: Clova Road



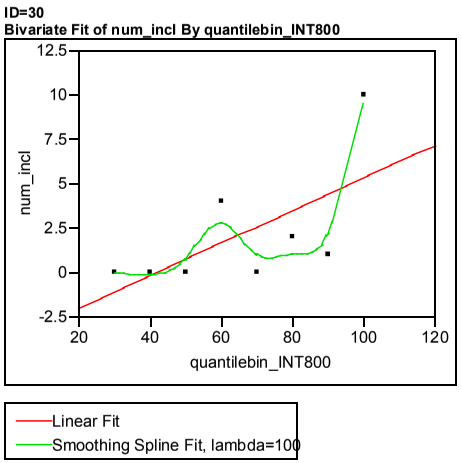
Drugs



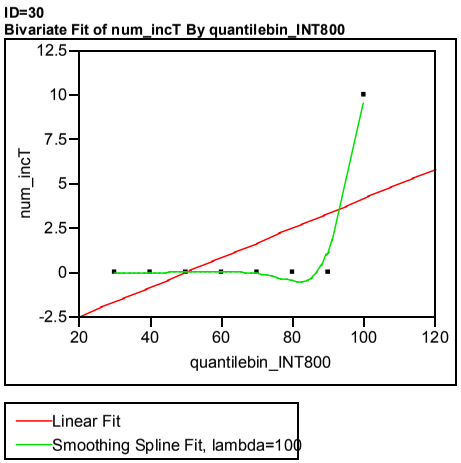
Graffiti



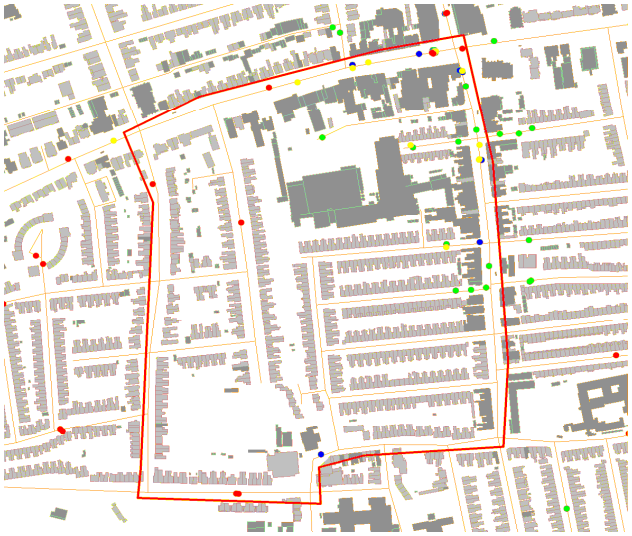
Violence



Theft



6 Newham Street Based Layout: Margery Park Road



Dwellings Type

- Dwellings
- Mixed Use
- Non-Residential

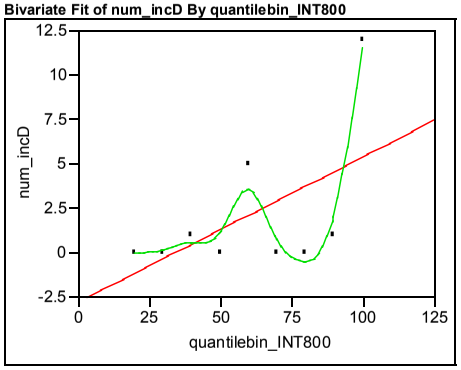
Type of Incidence

- Theft
- Drugs
- Prostitution
- Violence

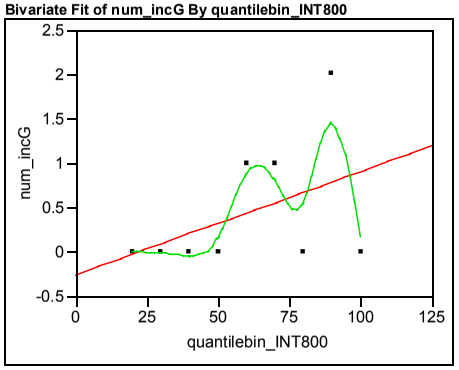
M25 by Deciles Integration R800

100 to 100	(569)
90 to 100	(569)
80 to 90	(569)
70 to 80	(569)
60 to 70	(569)
50 to 60	(570)
40 to 50	(569)
30 to 40	(569)
10 to 30	(1138)

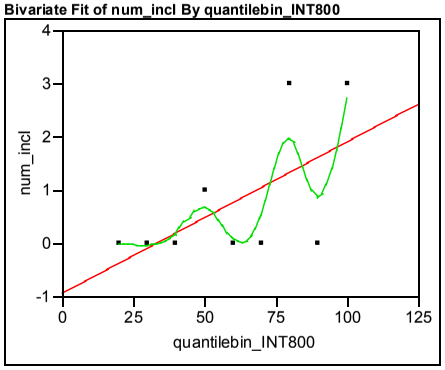
Drugs



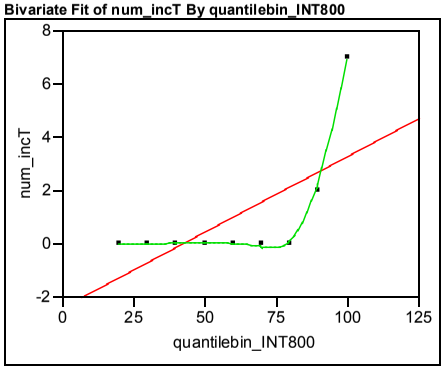
Graffiti



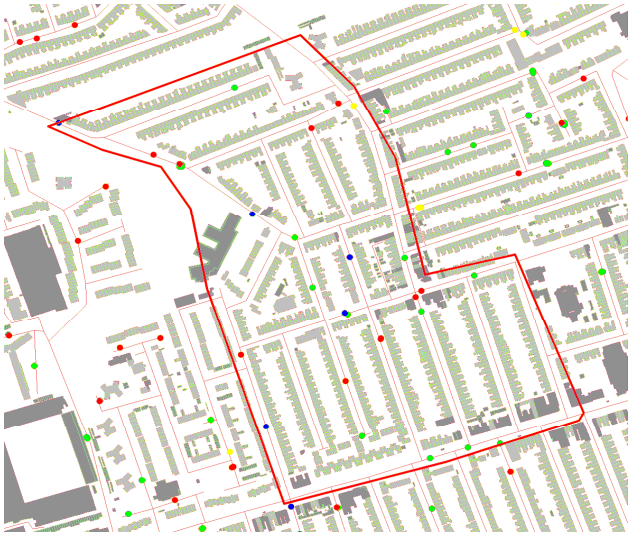
Violence



Theft



6 Newham Street Based Layout: Holme Road



Dwellings Type

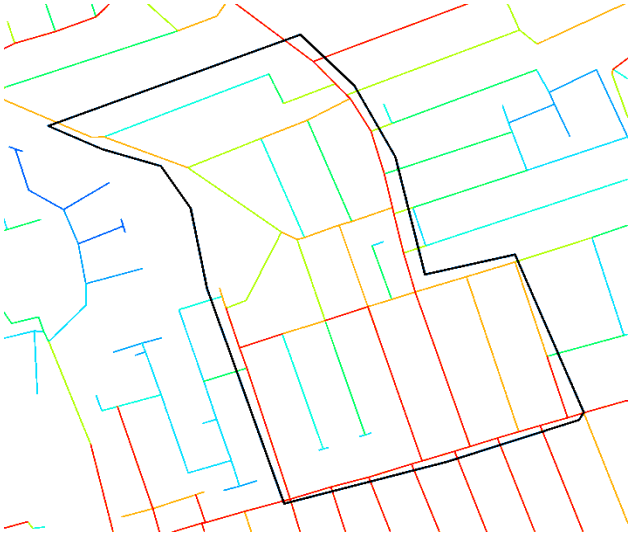
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

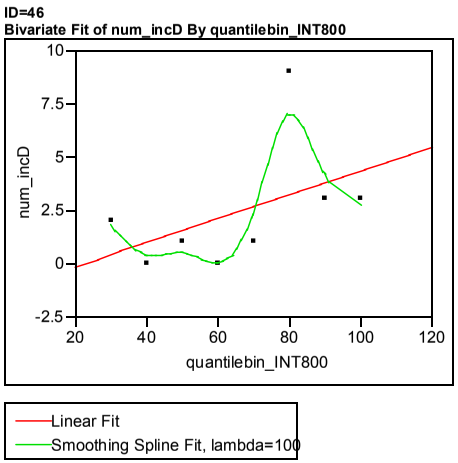
- Theft
- Drugs
- Prostitution
- Violence

M25 by Deciles Integration R800

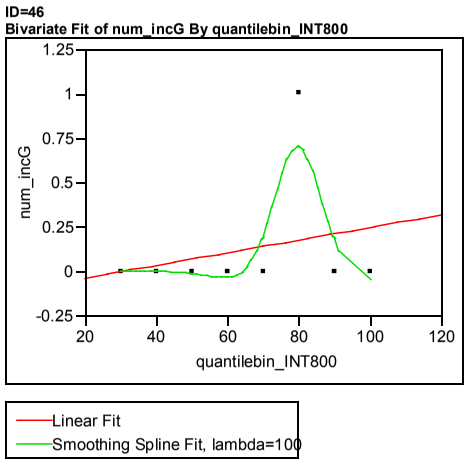
100 to 100	(569)
90 to 100	(569)
80 to 90	(569)
70 to 80	(569)
60 to 70	(569)
50 to 60	(570)
40 to 50	(569)
30 to 40	(569)
10 to 30	(1138)



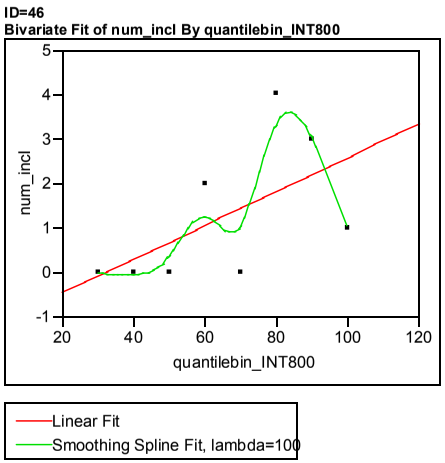
Drugs



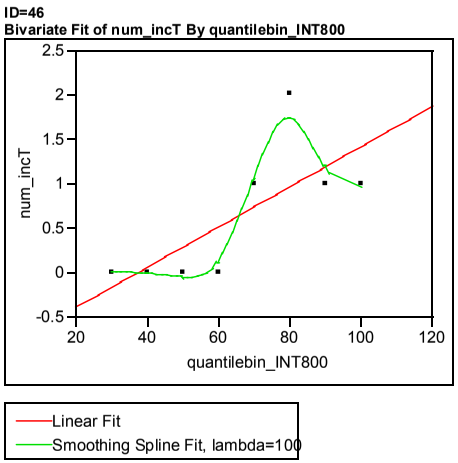
Graffiti



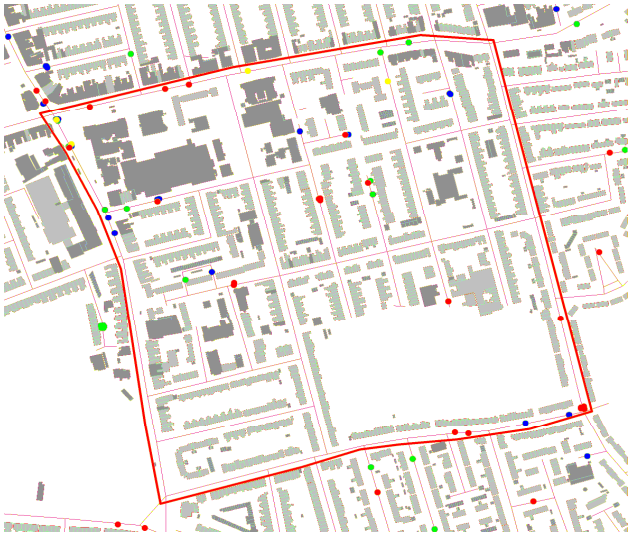
Violence



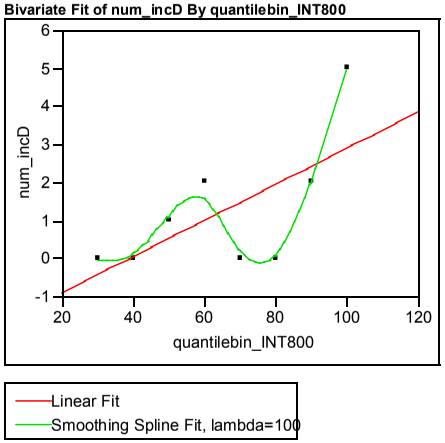
Theft



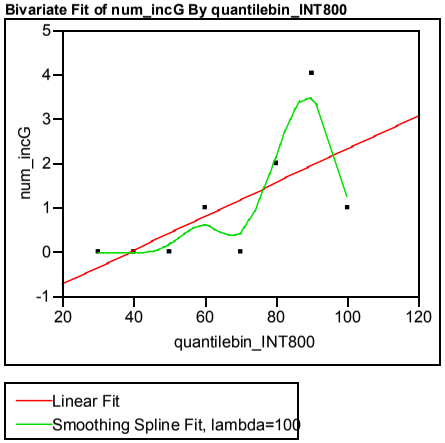
6 Newham Street Based Layout: Melbourne Road



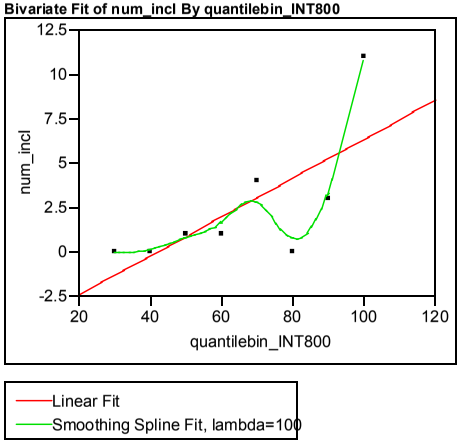
Drugs



Graffiti



Violence



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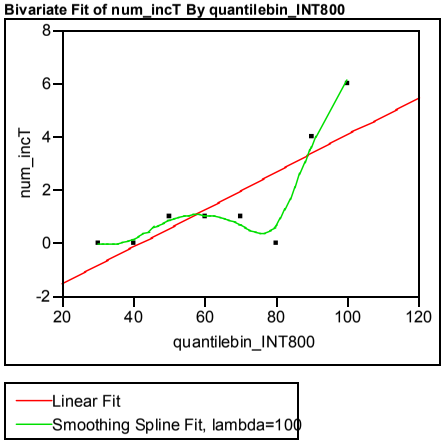
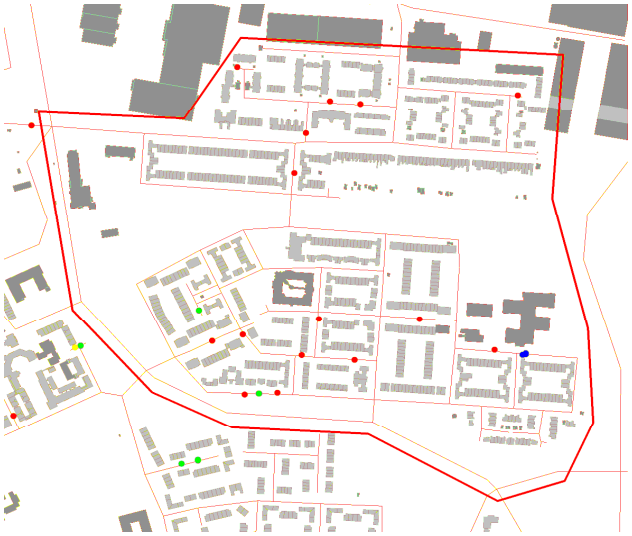
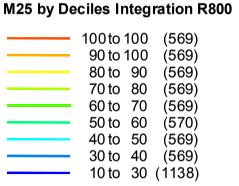
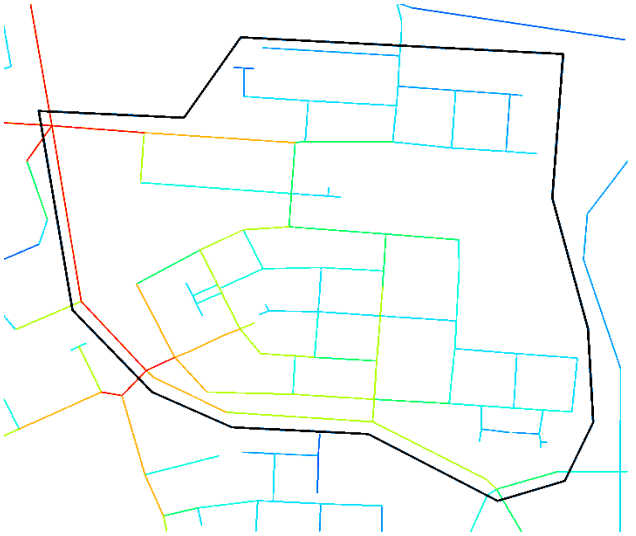


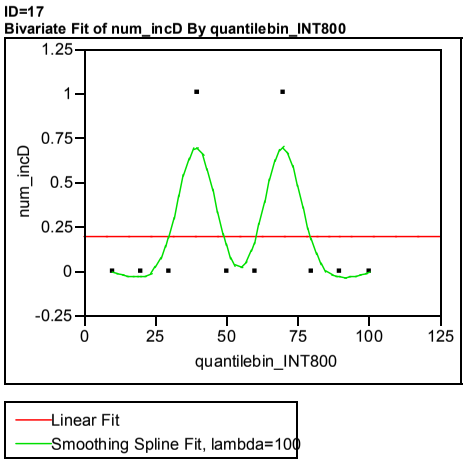
6 Newham Estate Layout: Windsor Terrace



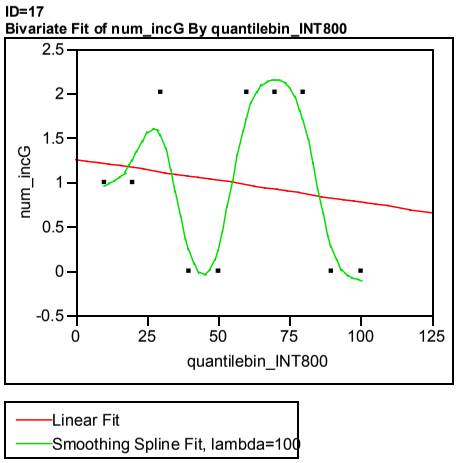




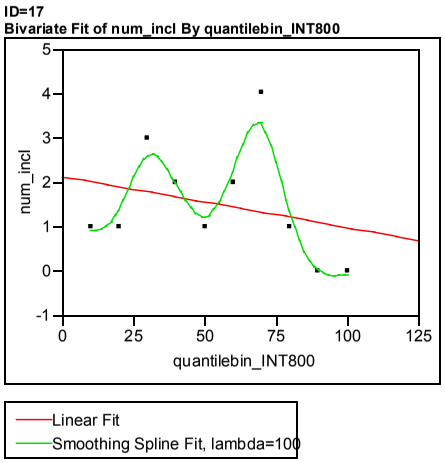
Drugs



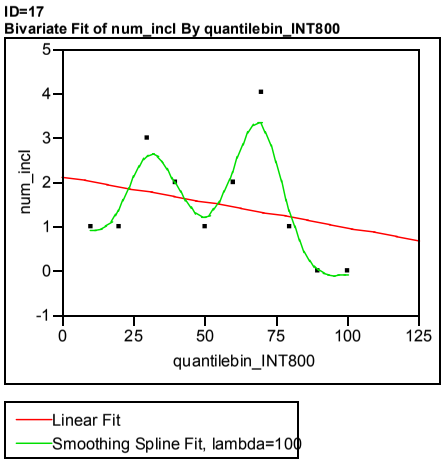
Graffiti



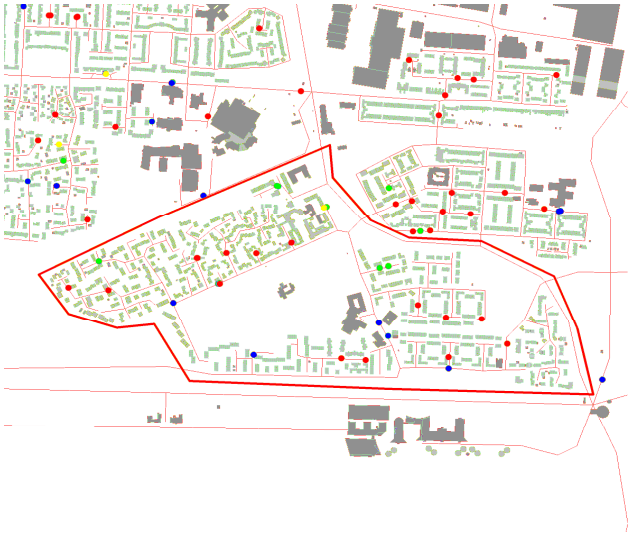
Violence



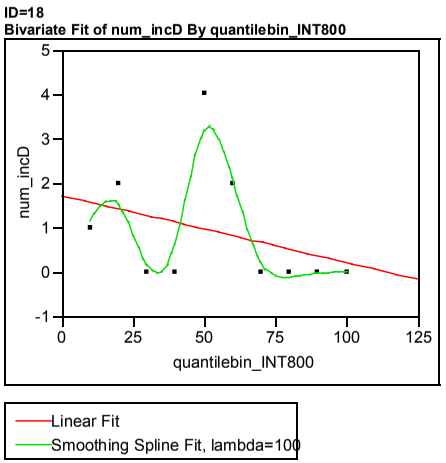
Theft



6 Newham Estate Layout: Savage Gardens



Drugs



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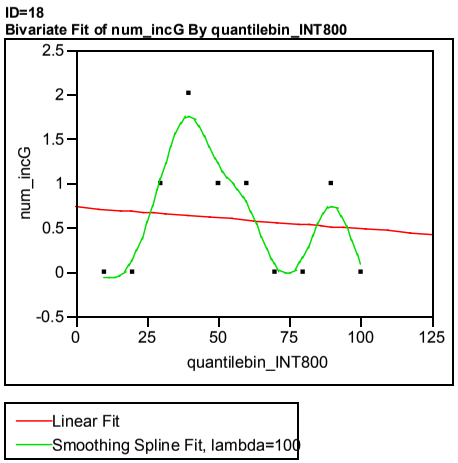
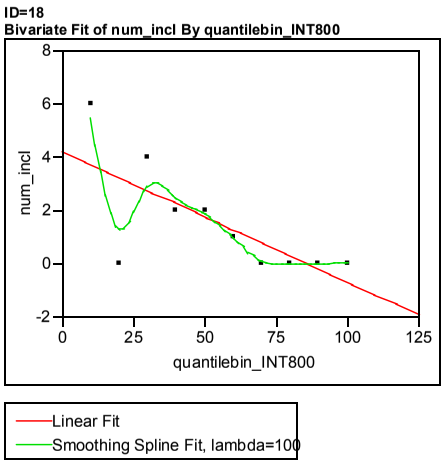
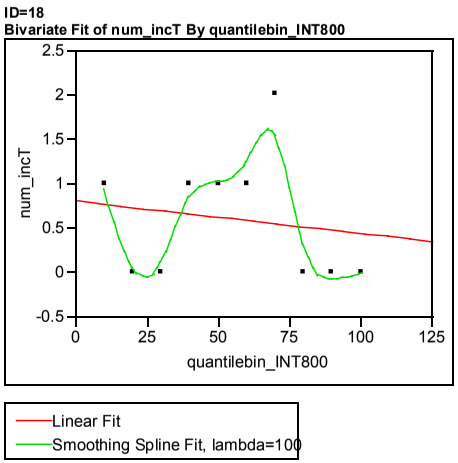


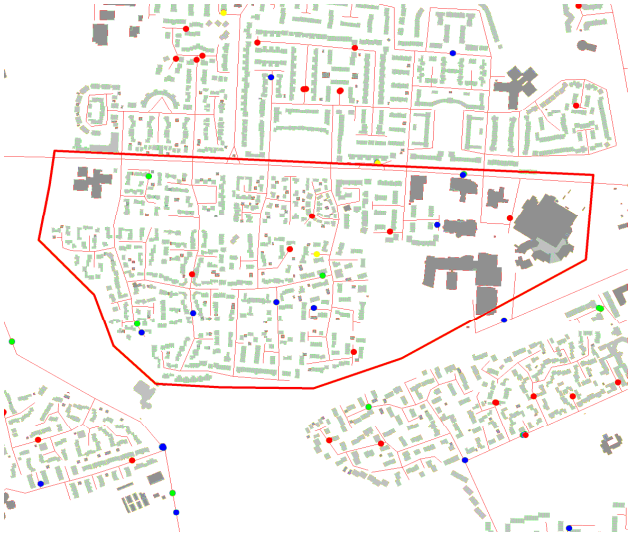
Violence

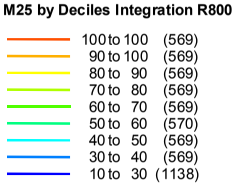


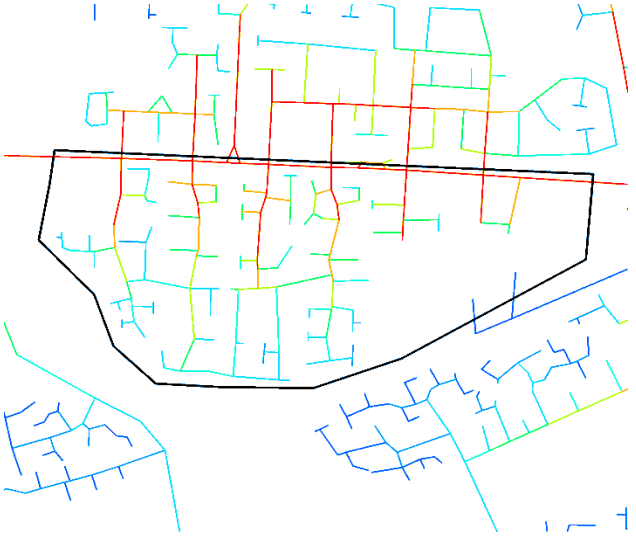
Theft



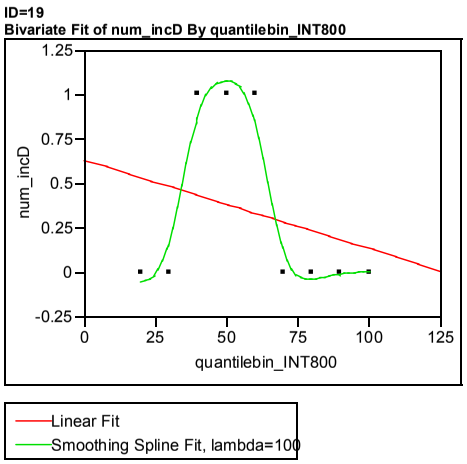
6 Newham Estate Layout: Oliver Gardens







Drugs



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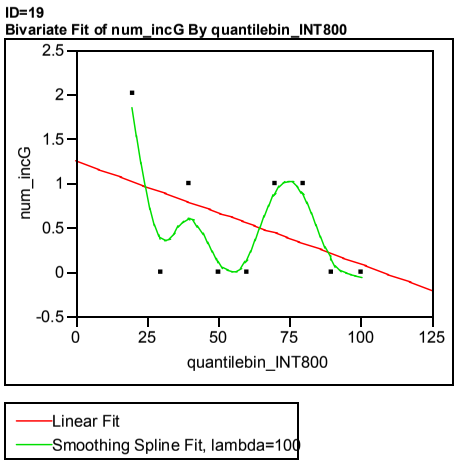
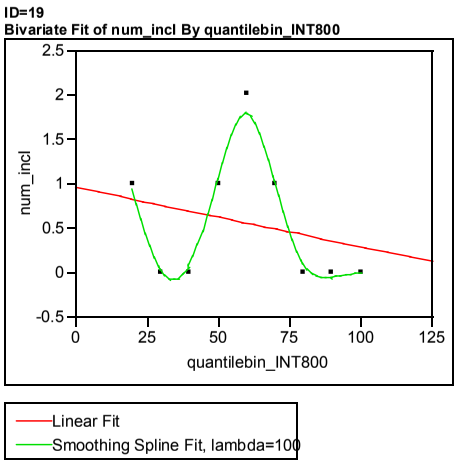
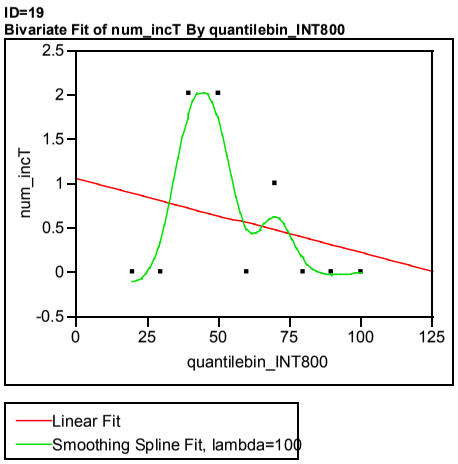


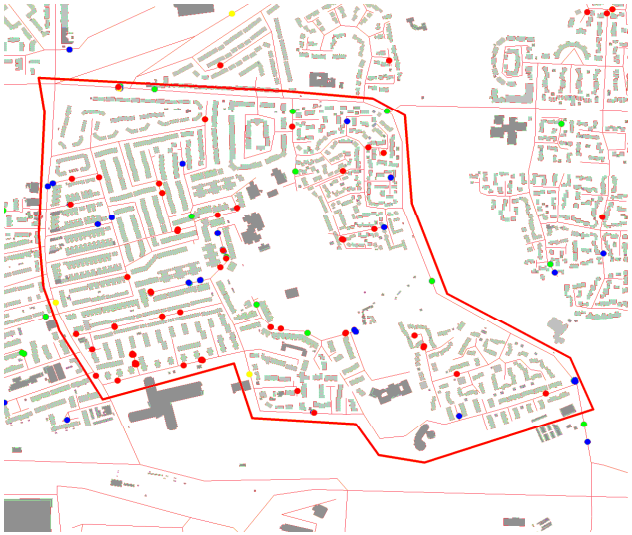
Violence

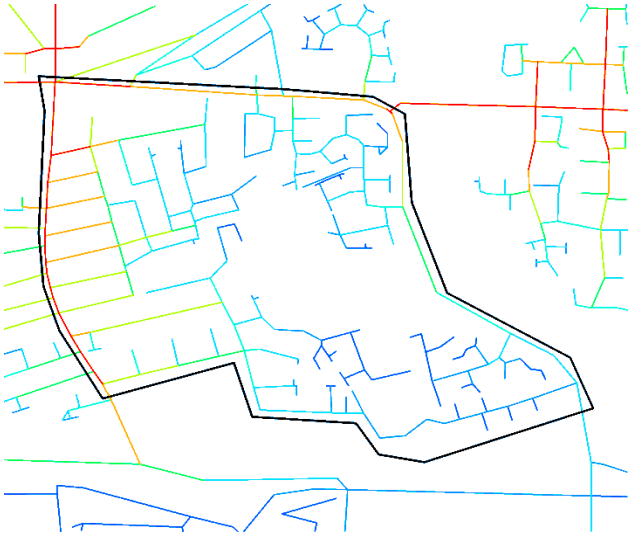


Theft

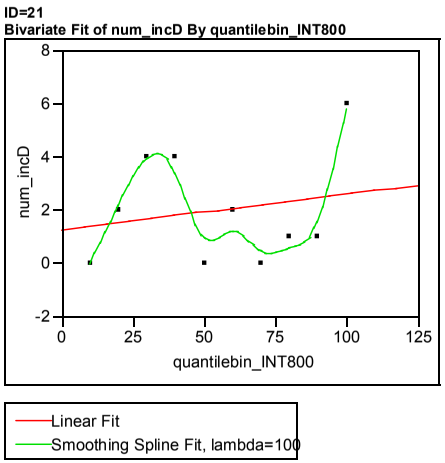


6 Newham Estate Layout: Stansfeld Road

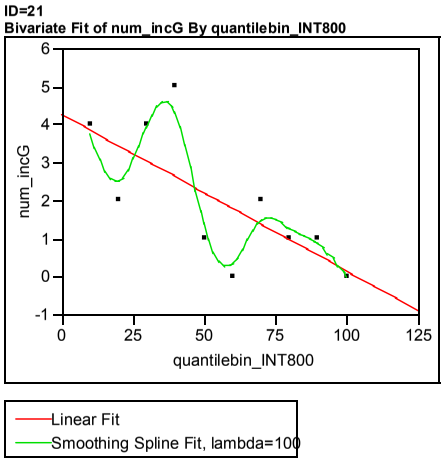




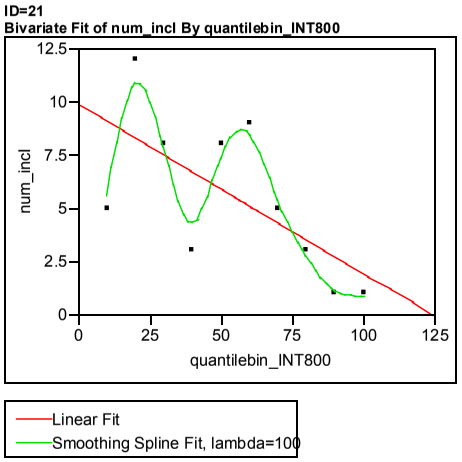
Drugs



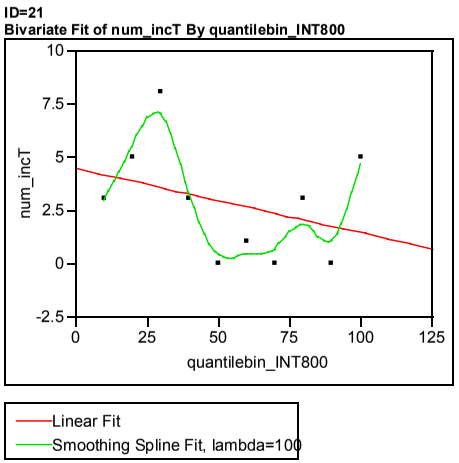
Graffiti



Violence

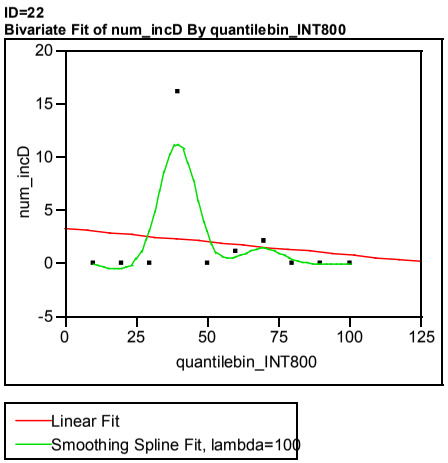


Theft

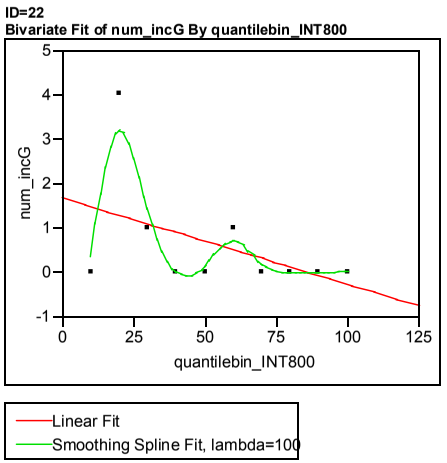


6 Newham Estate Layout: Lambert Road

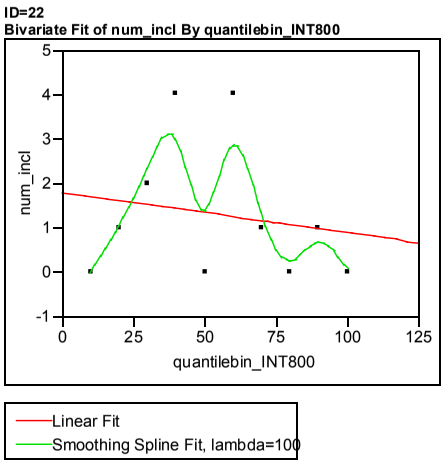
Drugs



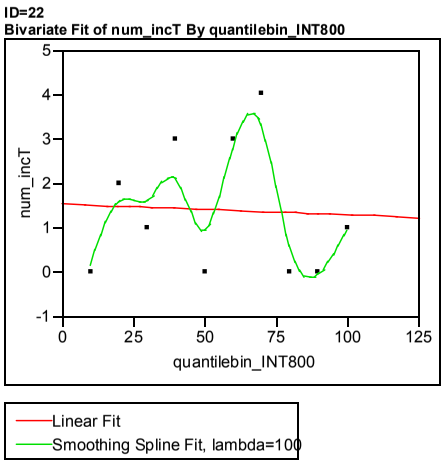
Graffiti



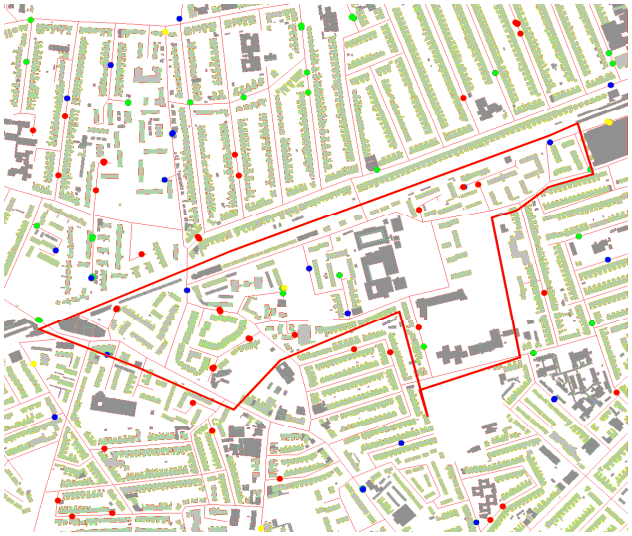
Violence



Theft



6 Newham Estate Layout: Queens Road



Dwellings Type

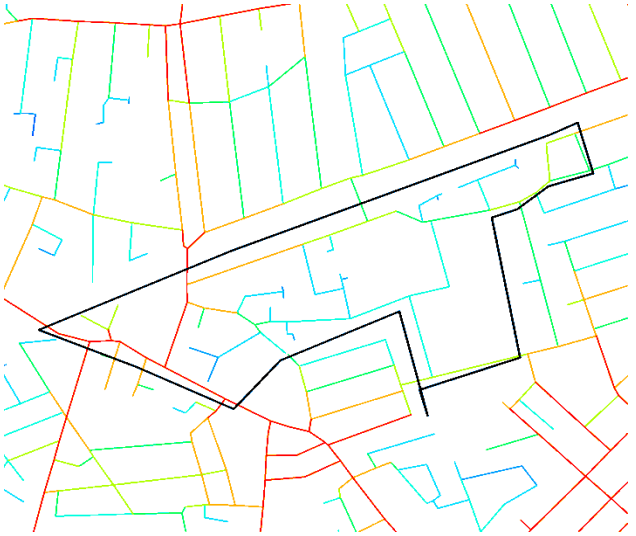
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

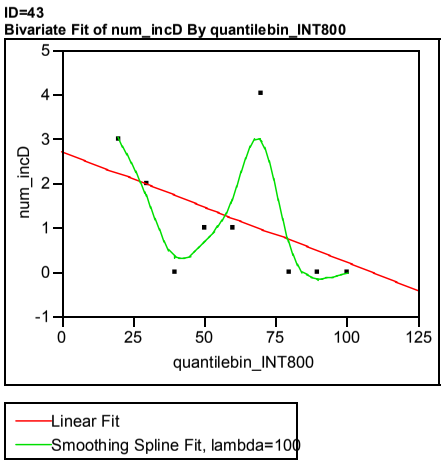
- Theft
- Drugs
- Prostitution
- Violence

M25 by Deciles Integration R800

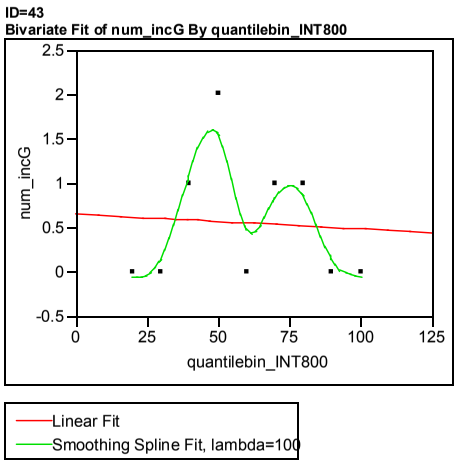
100	to 100	(569)
90	to 100	(569)
80	to 90	(569)
70	to 80	(569)
60	to 70	(569)
50	to 60	(570)
40	to 50	(569)
30	to 40	(569)
10	to 30	(1138)



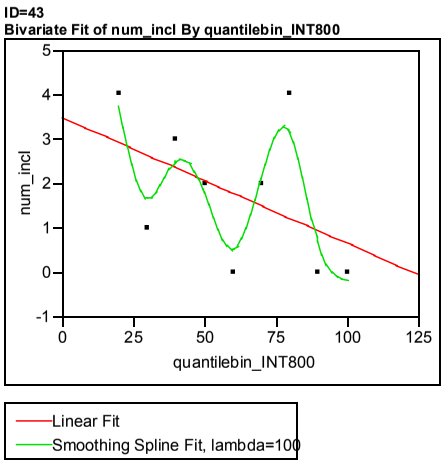
Drugs



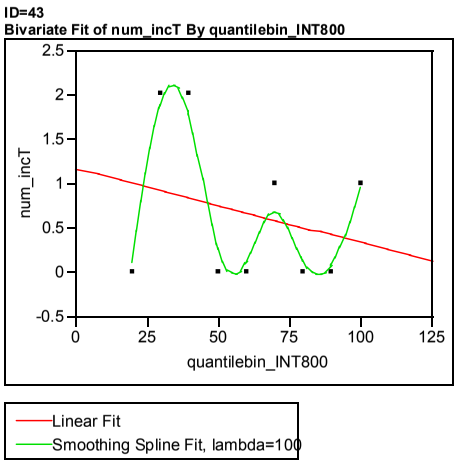
Graffiti



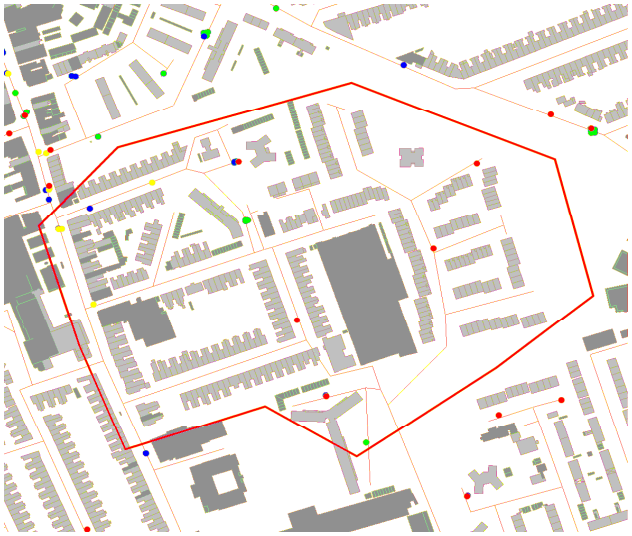
Violence



Theft



6 Newham Estate Layout: Redclyffe Road



Dwellings Type

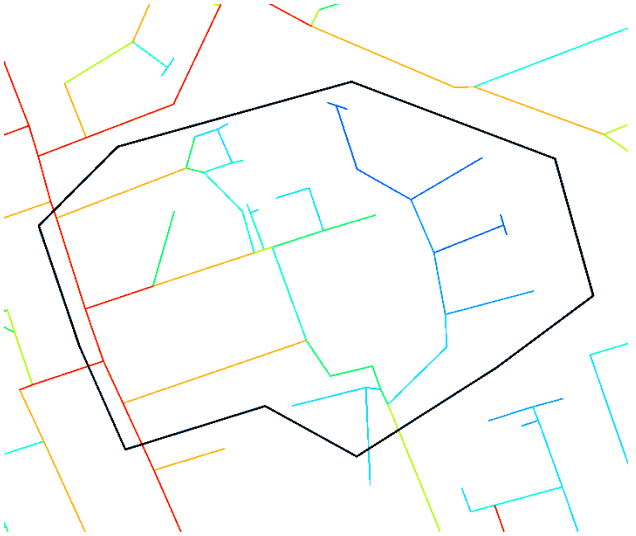
- Dwellings
- Mixed Use
- Non-Residential

Type of Incidence

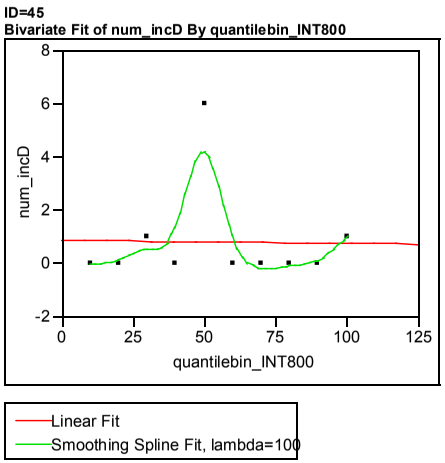
- Theft
- Drugs
- Prostitution
- Violence

M25 by Deciles Integration R800

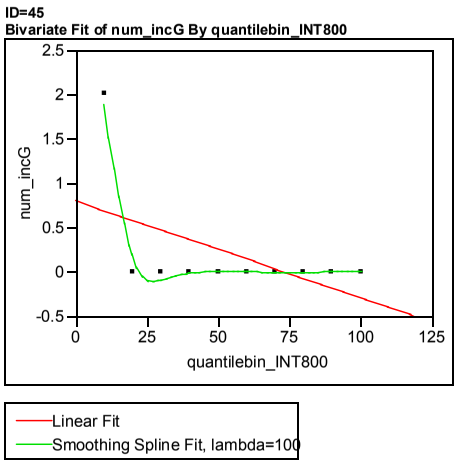
100 to 100	(569)
90 to 100	(569)
80 to 90	(569)
70 to 80	(569)
60 to 70	(569)
50 to 60	(570)
40 to 50	(569)
30 to 40	(569)
10 to 30	(1138)



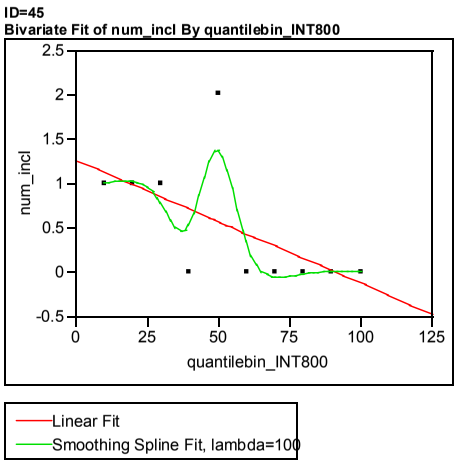
Drugs



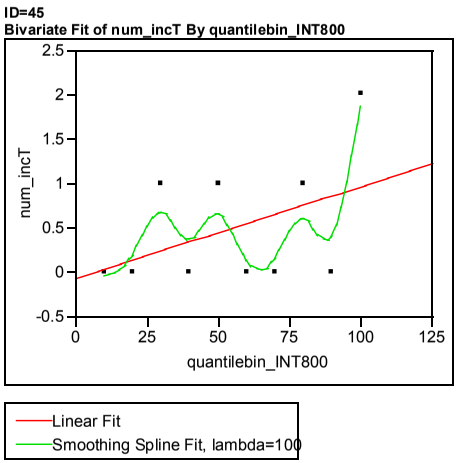
Graffiti



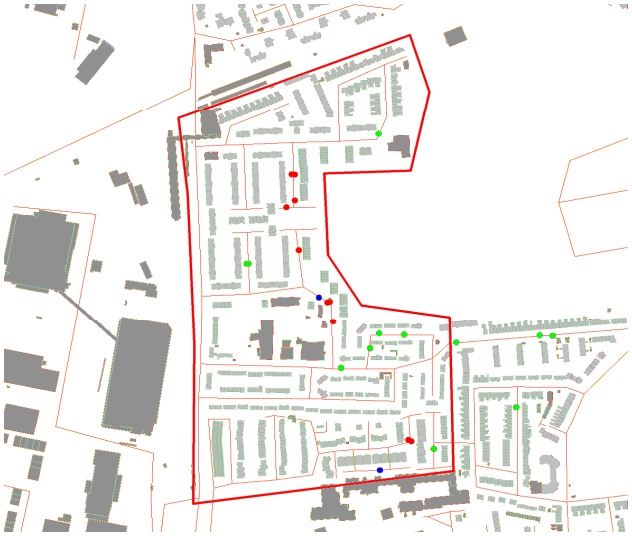
Violence



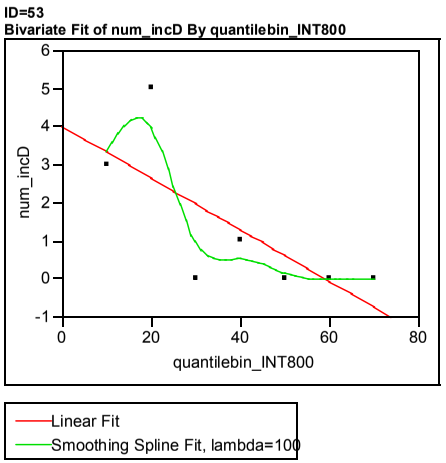
Theft



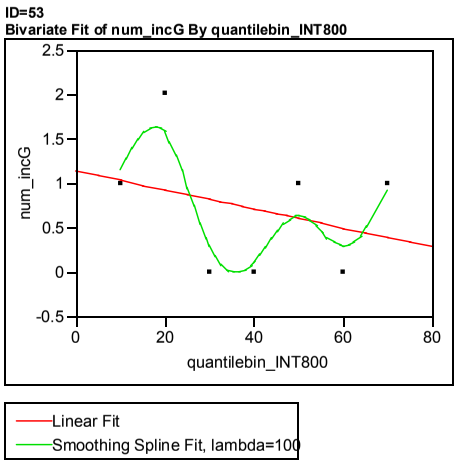
6 Newham Estate Layout: Gainsborough Road



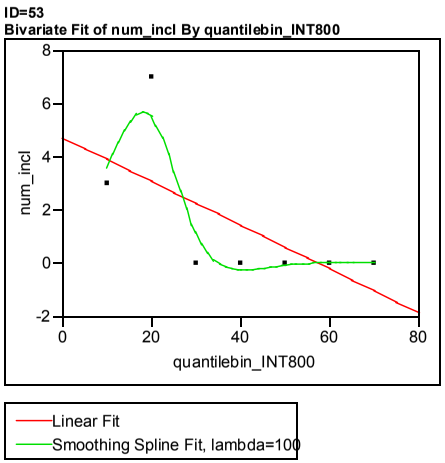
Drugs



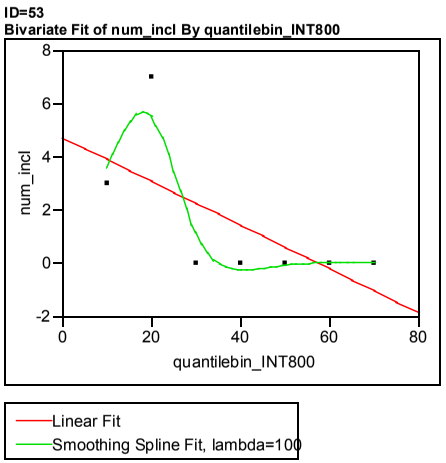
Graffiti



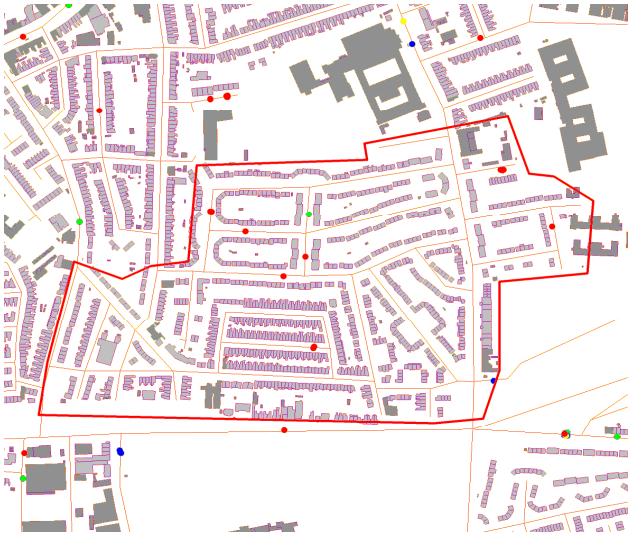
Violence



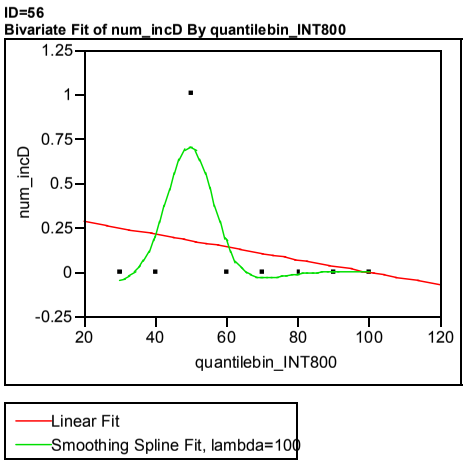
Theft



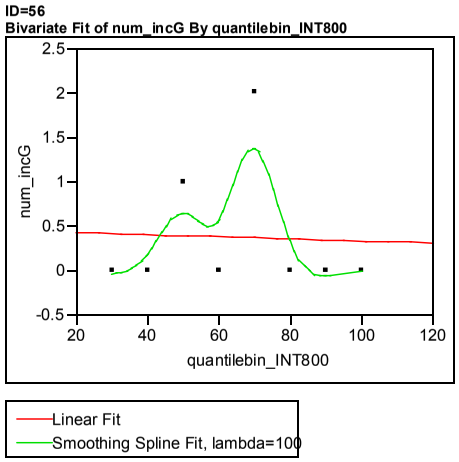
6 Newham Estate Layout: Holborn Road



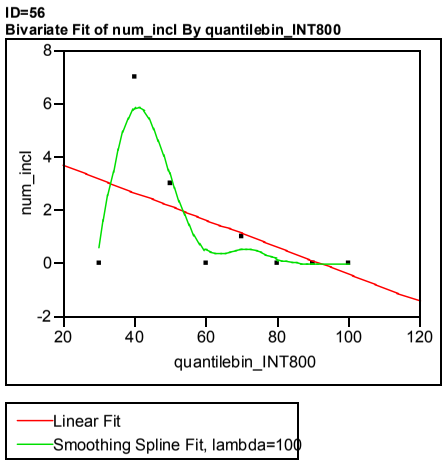
Drugs



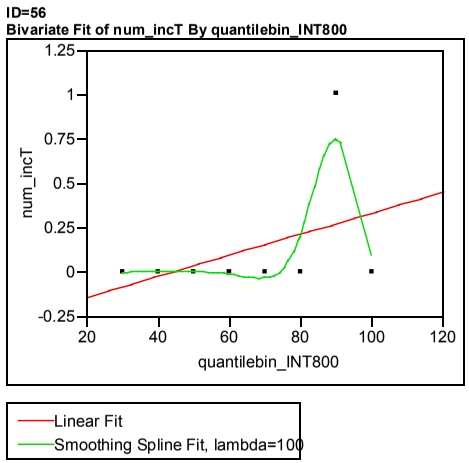
Graffiti



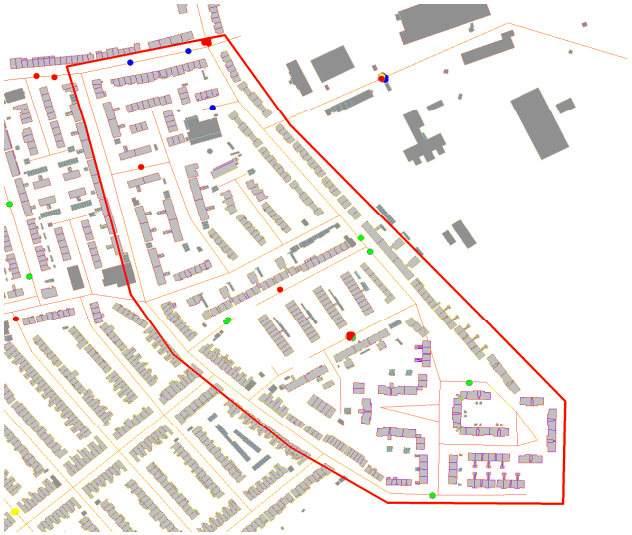
Violence



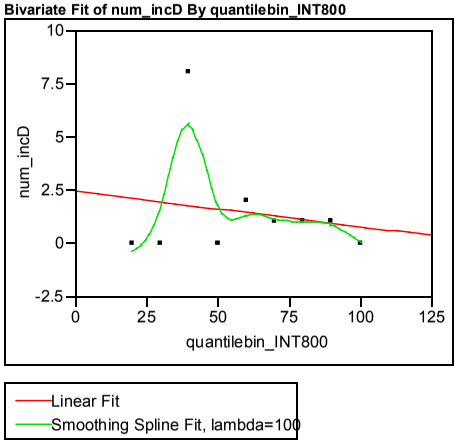
Theft



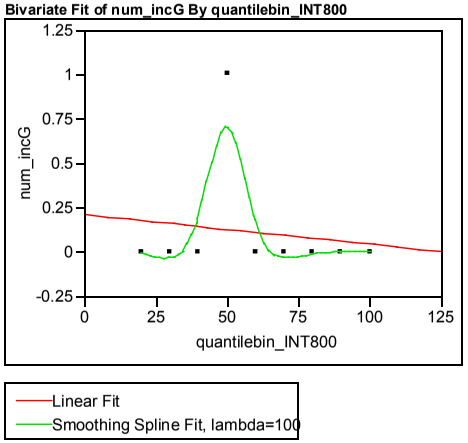
6 Newham Estate Layout: Eastbourne Road



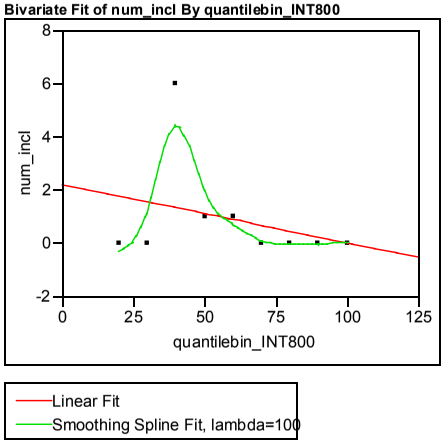
Drugs



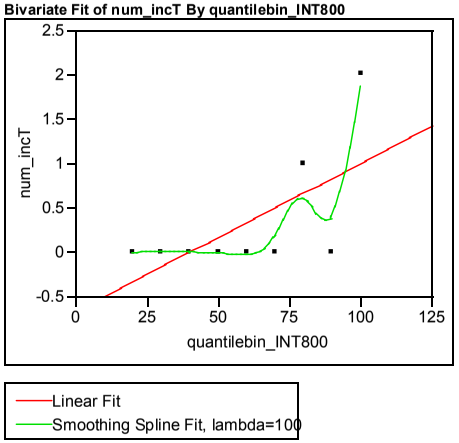
Graffiti



Violence

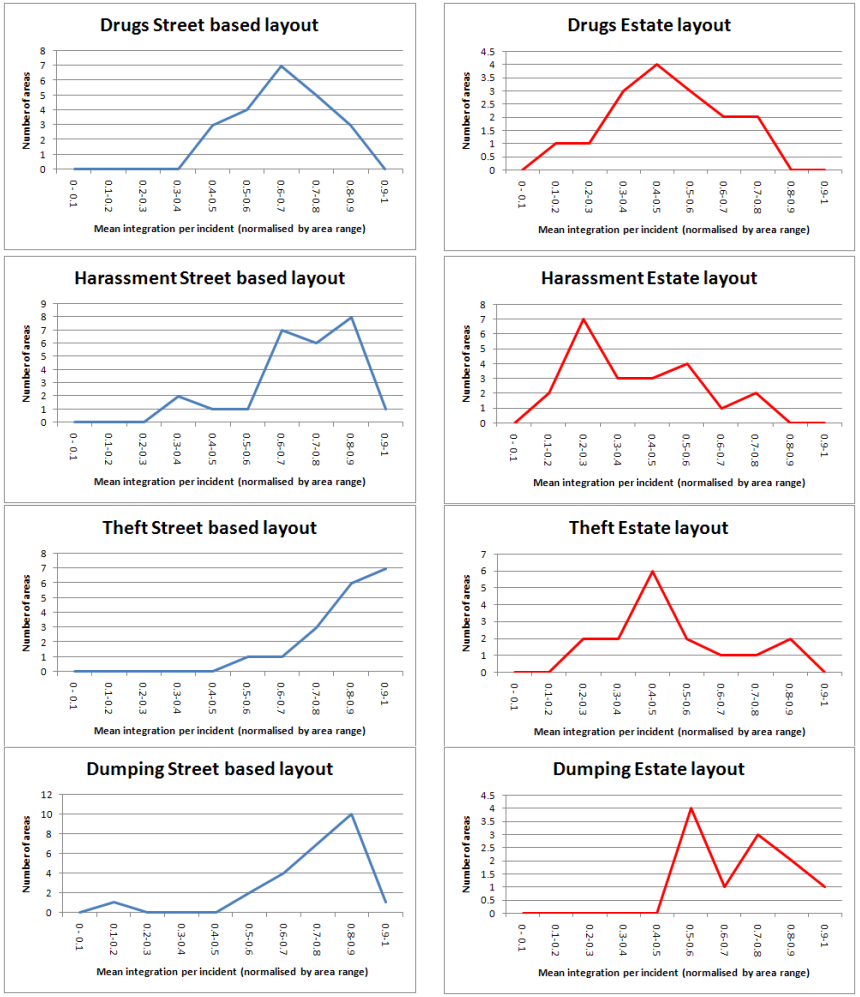


Theft



Number of areas per mean incident integration R800

Left: street based layouts, right: Estate layouts. For street based layouts, most areas have high mean values of integration for spaces where ASB occurs. Estate layout areas more often have low mean incident integration.



Number of areas per mean incident Integration R800 in street based layouts (left) and Estate layouts (right)

6 Newham Statistics summary

ID	Area type	Drugs	Harassment	Theft	Dumping	Area type	Drugs	Harassment	Theft	Dumping
1						ES			90.625	
2						ST				88.5714286
3						ES		37.5		86.25
6						ES	47.2222222			
7	ST	48.4848485	60.3174603		82.1428571					
8	ST	76.3888889	80.5555556	87.037037	76.9230769					
9	ST	59.6153846	81.8181818	100	82.8125					
10	ST	48.3333333	77.7777778	78.5714286	80.3030303					
11	ST	69.7132616	77.7777778	74.6031746	79.3650794					
13	ST	73.3333333	80	85	84.4444444					
14	ST	83.9285714	91.8478261	86.3636364	75					
15	ST	72.2222222	69.7916667	88.0952381	73.3333333					
16						ES	40.4761905	11.4285714	52.3809524	
17						ES		42.962963	22.2222222	
18						ES	34.5679012	20	44.4444444	
19						ES	53.125	53.5714286	47.9166667	58.3333333
20						ES		53.7037037	85.1851852	
21						ES	38.0116959	43.5897436	48.4126984	
24						ES	48.6111111	56.0683761	48.7455197	52.020202
25						ES	73.75	75	31.25	75
27	ST	59.6153846	63.0952381	94.047619	88.8888889					
28	ST	68.5185185	86.6666667		94.4444444					
29	ST	71.6981132	81.1428571	91.4285714	81.3186813					
30	ST	74.789916	82.3529412	100	70.7142857					
31	ST	66.6666667	37.5		66.6666667					
33	ST	64.1025641	63.5802469	66.6666667	64.6090535					
34	ST	67.1875	58.3333333		53.4090909					
35	ST	56.8181818	76.0416667	91.6666667	88.3928571					
36	ST	82.2222222	75.5555556	96.2962963						
37	ST	82.2368421	80.3571429	97.2222222	87.2368421					
38						ES	56.4102564	42.4242424		62.8205128
39	ST				55.1724138					
40	ST		48.1481481		77.7777778					
41						ES	25	26.5625	58.3333333	
42						ES			22.2222222	
43						ES	32.9545455	36.71875	39.5833333	87.5
46	ST	67.6691729	72.8571429	77.1428571	74.2857143					
47						ES		26.5625		
48	ST	45.5357143	77.6785714	86.7647059	65					
49	ST		60							
50						ES	55.5555556	69.4444444	72.7272727	75.2688172
51						ES	74.0740741	29.6296296		75
51	ST		80		81.4285714					
53						ES	14.8148148	11.6666667		
56						ES		22.0779221		55.1020408
57	ST	50	60	80						
58	ST		33.3333333	58.3333333						
60						ES	62.5	33.75		
61	ST	64.9350649	66.0714286		65.3061224					
63						ES	40.3846154	29.6875	91.6666667	
64						ES		58.3333333		
65						ES				90.4761905
66						ES		71	48	
67						ES	62.5	23.5294118	41.6666667	50
Average		66.09162296	70.10001996	85.51330296	76.04242312		47.49737392	39.7823494	52.83638649	71.3618771

Mean Integration R800 for ASB incidents per area in street based layouts (left) and Estate layouts (right)

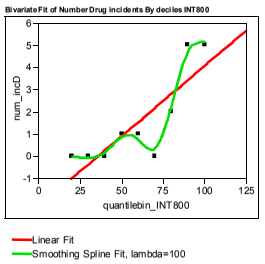
Mean integration R800 for ASB incidents per area

Displayed are mean values for all 67 areas in Newham. Street based layouts are in the left column, estate layouts in the right column. Green shades indicate a figure above, red below the average integration value. Estate layouts tend to have a lower than average integration value.

7 Newham Case Studies

Contents

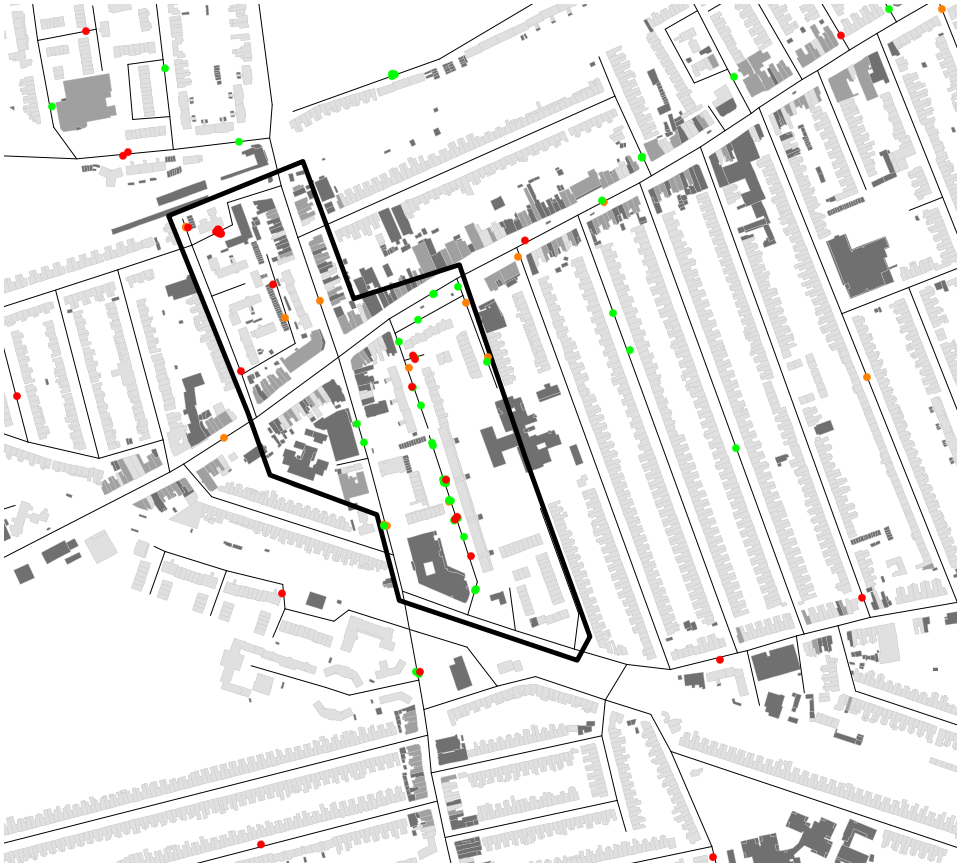
Drugs



Forest Gate
Incidents of Violence, Drugs and Theft

Street pattern is High Street embedded in street based terrace layouts.

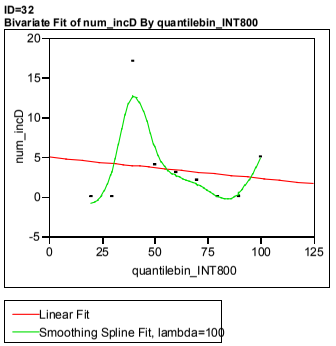
Incidents are on ore just off the main road.



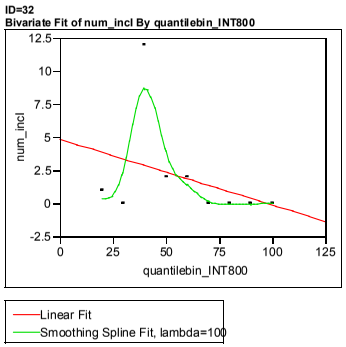
Manor Park
Incidents of Violence, Drugs and Theft

High street and unconstituted back streets.
Incidents withdraw into the back streets.

Drugs



Violence



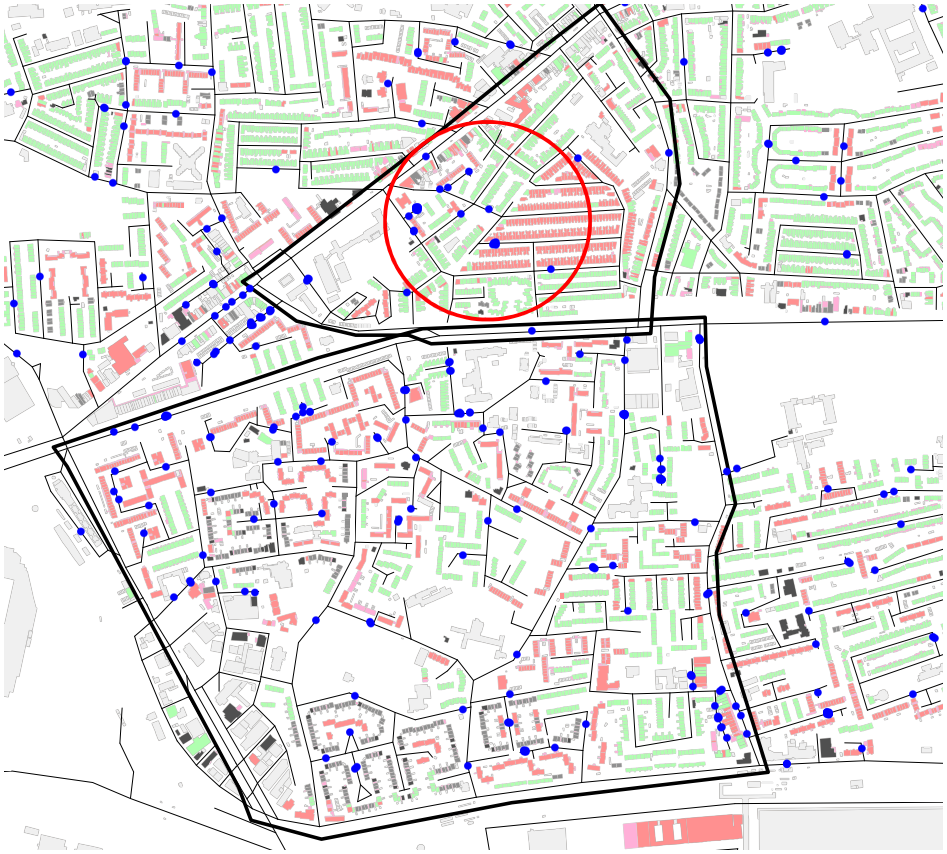
East Ham
Incidents of Violence, Drugs and Theft

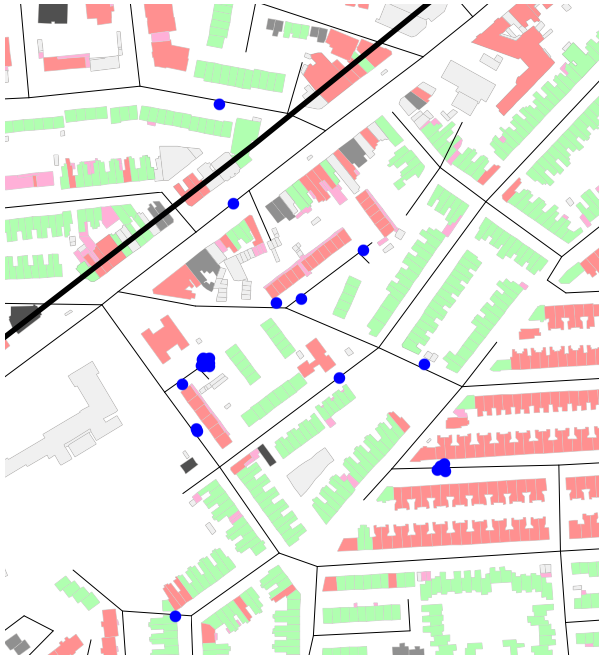
High street with a well-connected (East) and a less connected residential area (West)

There are more incidents in the western part. Incidents also tend to withdraw in the less integrated spaces.

Number of incidents per Population Density

ID	Drugs	Violence	Theft
14	0.001704	0.00263915	0.00360902
48	0.007997	0.0055453	0.0152313





Incident patterns in Estate layouts (south) and Street – based layouts (north).
In the street based layout, incidents tend to happen on the edge of the area, or on places where the building constitution breaks down – see detail picture: These fragmented structures, poorly constituted back streets of Barking Road, attract incidents.