Yes, No, Definitely, Maybe!

What Works in Designing out Crime from Residential Housing, and what are the Implications for Policy and Practice?

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Today’s presentation

• **Review the evidence** on what works in designing out crime from residential housing.
• Highlight **practical issues** raised within the UK.
• Bring together the **evidence-base**.
• Offer **guidance** on how to avoid problems.
• Although review of evidence is international, specific case studies are **UK based**.
• Many of the problems and solutions are **transferable**.

*Inspiring tomorrow’s professionals*
• **Huge progress** in this field since 1998.
• Increasing recognition that **design can impact upon crime** and that crime reduction is **not sole responsibility** of the police.
• **Academic** research, **policy** (planning and crime reduction) and **practical application**.
• Accepted recognition that design can influence crime...however, little attention paid to **which specific features** influence crime.
• **Conflicting policies** – agree that crime is important consideration in design, but differ on how this should be achieved.

  - Confusion amongst practitioners.
Major UK study (2010)

- As a means of addressing this.
- In 2010 UK Home Office funded major project ‘residential design and crime’.
- Strengthen and update evidence base on impact of residential design on crime.
- Clarify confusion.
- Focus on developments classed as good practice/award winning – is ‘good design’ also achieving crime reduction?
- Presenting the key findings today.
Brief overview of methodology

- **Scoping the evidence** – 74 policy, guidance and research documents.
  - International - England, Scotland, Ireland, USA, Canada, Australia, Denmark, Italy, Holland, France (only those written in English).

- **Analysis of crime:**
  - **Macro level** – 34 developments, 4091 properties, 3 police forces.
    - Larger sample but less detailed analysis (compare crime with government’s previous assessment in regular Housing Audit).
    - Able to look at more properties but relying on assessments already conducted.
  - **Micro level** – 12 developments, 2193 properties, 3 police forces.
    - Smaller sample but very detailed analysis (compare crime against individually assessed features of EVERY property/development).
    - Features we chose and we assessed.
• 12 developments, 2193 houses, 3 police forces.
• Research team (for each development):
  – Conducted **interviews ‘on-site’**:  
    • With police Architectural Liaison Officer, Local Authority Planning Officer, Neighbourhood Policing Team
    • Discussed questions, raised issues while on-site, allowed comments to be set in context.
  – Completed an **Design Features Checklist**:
    • Data relating to 31 design features (property) and 19 design features (development) for EVERY property and development.
  – Completed a **Design Quality Checklist**:
    • Data relating to design quality of EVERY property and development.

• Huge source of data to work with.
Design Features Checklist

Factors relating to the Whole Development

<table>
<thead>
<tr>
<th>Location</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>1. Does the development provide communities facilities especially for young people e.g. youth centre?</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>2. Does the street layout, signage and house numbering make it easy to find your way around?</td>
<td>Yes</td>
<td>No</td>
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<table>
<thead>
<tr>
<th>Layout</th>
<th>Yes</th>
<th>No</th>
<th>Open land</th>
<th>Shops</th>
<th>Other</th>
<th>Residential area</th>
<th>Maze of Footpaths</th>
<th>Other</th>
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<tr>
<td>3. Are there gateways or other symbolic features defining the entrance to the development?</td>
<td>Yes</td>
<td>No</td>
<td>Open land</td>
<td>Shops</td>
<td>Other</td>
<td>Residential area</td>
<td>Maze of Footpaths</td>
<td>Other</td>
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<td>4. If there are footpaths within the development, do the footpaths lead to:</td>
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<td>5. If there are footpaths within the development, do footpaths have adequate lighting?</td>
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DESIGN: Qualitative analysis scoring
Scheme: Clarence Gardens, Birmingham  
Date of survey: 19/01/2010  
Total Score: 47%

LOCATION AND ACCESS
1. Does the development have easy access to local facilities – schools, shops, etc and to public transport? Score: 4
2. Do the streets and footpaths/cycleways separate from roads in the scheme connect with roads and footpaths around the scheme? Score: 2

LAYOUT AND PLACE MAKING
3. Does the housing have a character of its own, which is suited to and enriches its surroundings? Score: 2
4. Is there variety of housing to provide for a mixed community in terms of household type and tenure? Score: 2
5. Does the design break down the scale of development into neighbourly groupings to facilitate natural social contact through variety of layout, building materials and appearance, or by any other means? Score: 2
6. Are there gateways, focal points, landmarks, pocket parks, public art and other easily recognisable features to create distinctive places within the scheme and to help people find their way around? Score: 2

STREETS AND PARKING
7. Is parking well integrated into streets and housing and clearly overlooked? Score: 1
8. Is there a clear difference in street design and surface materials between "public" access roads and "semi-public" streets where pedestrian presence should have priority over vehicles? Score: 3
9. Are there places where potential offenders could lurk unnoticed? Score: 2
10. Does corner housing have windows in end gables, and or corner windows in order to provide natural surveillance of both or all aspects? Score: 2
11. Are footpaths separate from roads overlooked from nearby housing? Score: 3
Conducting the interviews

- Unique, painstaking methodology – detailed results.
- One element which worked well – interviews on site.
- Interview and walk-about.
- See issues in context.
- Challenge if notice other problems.
- Agencies talked to each other!
Completing the checklist (2193 properties)

• Another element which worked very well.
• Physical completion of checklists for every property.
• Very time consuming.
• BUT able to assess ACTUAL layout and use of every property/development as opposed to making predictions remotely.
Two key themes emerged....

Impact of car parking
Impact of connectivity/through-movement
Impact of car parking on residential design
The design and layout of car parking provision within residential housing can have a significant impact on crime and anti-social behaviour.

Surprisingly, consistent priority/concern at all sites.

Poorly designed car parking not just linked to vehicle crime, can also lead to problems with:

- Theft of and from motor vehicle
- Criminal damage.
- Youths causing annoyance.
- Neighbour nuisance.
- Violent crime.
Car parking and crime – what does previous research say?

• Brown and Altman (1983):
  – Studied the features of burgled/non-burgled properties and found that those without a garage were more likely to have experienced a previous burglary.

• Cromwell *et al* (2001):
  – Used staged-activity analysis to identify features which make a property vulnerable. Burglars found properties without a garage to be more vulnerable to burglary.
Car parking and crime – what did we find?

- **Macro:** Government housing assessors scored properties:
  - To what extent is... ‘car parking situated as not to detract from the street scene’ (1-3).
- A score of 1 would suggest parking which DID detract from the street scene and 3 parking which DID NOT.
- As compared to base score of 1:
  - Developments which scored 2 experienced 40% less vehicle crime and 68% less criminal damage.
  - Developments which scored 3 experienced 74% less criminal damage than those scoring 1 (no sig diff between 2 and 3 for vehicle crime).
- Cars parked away from street scene (garage, car park) experienced lower crime.
Car parking – what did we find?

- Micro analysis.

- Properties with communal parking experienced higher levels of vehicle crime than on plot parking.

- Developments with allocated visitor parking experienced lower crime than those which did not provide visitor parking.
Common Practical Issues

Case studies
Rear parking courts

- Option for parking away from frontages.
- By very nature out of view of properties and street users.
- Often accessed via archway between/under dwellings.
- Archway entrances can be narrow, dark with no surveillance.
- Options to gate – but rely on people using them.
Many residents, even where no alternative, were not parking in rear parking courts (their allocated parking).
  – Fear for own safety
  – Concern regarding safety of vehicle.
  – Do not want to carry child, bags, work from court to house.

Where unused (and this was most) – rear courts used for anti-social behaviour:
  – Youths hanging around.
  – Joy-riding.

The more used for illegal activity, less likely to be used by residents (and the cycle continues).
Inappropriate parking solutions

- Developer/architect attempt to solve issue of cars dominating which led to unintended, negative consequences.

- Driveway too short for car – encourage parking in garage of rear court.

- Residents continued to use drive (convenience and safety) with cars left jutting onto street.
Inappropriate solutions - implications

- Residents continued to use driveway as a parking space to be close to property:
  - Safety (their safety and safety of vehicle).
  - Convenience.
- As a consequence, cars left jutting onto the pavement/road – blocking the path.
- This design solution made three incorrect assumptions:
  - Residents are happy for car to be parked out of sight.
  - Residents do not mind walking a distance to their property.
  - Residents will use garage as a parking space.
- Management companies were employed to enforce parking regulations (cost).
Inconsiderate allocation

• Architect/developer had not considered the end user in design of parking.
• Two properties each look directly onto parking space.
• Space is for one property, so someone is looking out onto neighbour’s car.
• If work van, 4x4 could cause problems.
• Patio doors almost hit car!
Inconsiderate allocation – implications

• Neighbours left angry notes on parked cars.

• Analysis of crime statistics - two serious crimes relating to neighbour disputes over parking:
  – One public order offence
  – One assault.
Car parking – key research findings

- **Rear parking courts** experience higher levels of vehicle crime and criminal damage and facilitate access to the rear of properties.
- Developments with **allocated visitor parking** experienced less crime.
- Developments with **communal parking** experienced more crime than those with on-plot parking.
- Residents prefer to **park close to their property**, where not provided they will find their own solutions.
- Lack of consideration for users can result in **expensive retrofit solutions** (management companies).
- Disputes relating to car parking can lead to more **serious violent crimes**.
Impact of connectivity on residential design
Connectivity and residential crime

- The type of road serving a property/development.
  - Through road
  - Cul-de-sac
    - True (no footpaths) or leaky (external connections).
    - Linear (can see to the end) or sinuous (no visibility to end).

- Movement within and throughout the development.
  - Presence of footpaths
  - Where do they lead to?
  - Rear/side/front of properties.
  - Length/width
  - Lighting
Road layout – what does previous research suggest?

- Hillier and Sahbaz (2009) argue that: “There are insufficient empirically based studies to form any conclusions regarding the impact of road layout on crime”.

- Review of 74 key documents suggests otherwise.

- Many methodologically strong studies presenting clear findings relating to impact of connectivity on crime.
What is the problem with connectivity?

• Put simply, the connectivity debate centres on following arguments:
  • Increased connectivity/through movement:
    – *Positive*: Less reliance on the motor vehicle.
    – *Positive*: More pedestrians using the street creates more eyes on the street/surveillance.
    – *Negative*: Increased access/escape for offenders.
    – *Negative*: Increased anonymity for offenders (i.e. Just a passer-by).
    – *Negative*: Increased opportunity for offenders to become aware of a target.
  • Review of literature favours argument that increased connectivity leads to increased crime, but ...
    – One methodology has produced very different findings.
    – Our study revealed that you can develop with high levels of connectivity IF this is done with security in mind/in consultation with police.
### Summary of studies:
Increased connectivity = increased crime (variety of methodologies)

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<thead>
<tr>
<th>Being located on a development with high levels of connectivity</th>
<th>INCREASES risk of crime.</th>
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<tr>
<th>Being located on a travel path</th>
<th>INCREASES risk of crime.</th>
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<tr>
<th>Being located on a cul-de-sac</th>
<th>REDUCES risk of crime.</th>
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<tr>
<th>Closing off streets</th>
<th>reduces crime.</th>
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Johnson and Bowers (2010)

- 118,161 homes (UK).
- All things being equal, relative to a property on a local road (connect neighbourhoods), a property on a major road (connect towns, cities) …
  - Expected increase in burglaries of 22%.
- For properties on private roads (no connections), relative to local roads…
  - Expected decrease in burglaries of 43%.
- For a street segment….for each additional link to other roads the predicted burglary count increased by 3%
- Culs-de-sac safer than through roads.
- Sinuous culs-de-sacs safer than linear.

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• 6,000 properties (UK).
• Compared to ‘true cul-de-sac’ (no connections), a property on a through road experienced…
  – 93% more crime.
• Compared to ‘true cul-de-sac’ a property on a ‘leaky cul-de-sac’ (connections) experienced…
  – 110% more crime.
• As with Johnson and Bowers (2010) the study identified that crime risk was lower on…
  – Sinuous as opposed to linear culls-de-sac.
Road layout: what does previous research suggest?

- In his review of the evidence, Taylor (2002) concludes that:
  - “Neighbourhood permeability is....one of the community level design features most reliably linked to crime rates, and the connections operate consistently in the same direction across studies: more permeability more crime” (Taylor, 2002, p.419).

- Assertion, is not entirely correct as several studies – those conducted using Space Syntax methodologies, have concluded that increased levels of connectivity have a beneficial impact on crime.

- Space Syntax is a mathematical approach which (remotely) takes account of street network and how each street segment connects to other streets in the area.
Summary of studies: 
Increased connectivity = less crime (Space Syntax)

Road layout – what does the research say?

- Historically (unhelpfully) presented as a polarised debate.
- Disparity likely to relate to methodological differences.
  - Space syntax is computerised method which has to make some presumptions about layout, movement and ACTUAL USE.
  - Where development is physically assessed fieldworkers can make clearer distinctions regarding layout, official and unofficial footpaths and observe ACTUAL movement.
- Rather than focus on differences, what are consistent findings and how can we compromise?
- Consistent finding across all methodologies is that ‘leaky’ culs-de-sac are the least safe.
- Compromise - detailed case study analysis (UK) showed developments can have high levels of connectivity and low crime.
• Example of compromise...
• One development in UK, high crime area. Large number of footpaths but no burglaries in three year period.
• Developers insisted on high levels of connectivity BUT did so with close consultation with police.
• All footpaths ran at the front of houses, all required and well-used, wide and well lit.
• **NO REAR FOOTPATHS!**
Issues to consider

Connectivity
Road layout – footpaths

- Major risk to increasing crime...
- **Rear footpaths.**
- Little or no surveillance.
- Not direct.
- Poor lighting.
- Hiding places.
Road layout – footpaths

- Side and rear footpaths leave properties vulnerable.
- Stairway footpath – design expert thought was an excellent feature.
- Analysis of offender *modus operandi* showed large number of burglaries committed with access via this boundary wall.
Road layout – footpaths

- Corner plots bounded by footpaths – vulnerable to crime.
- This property bounded by a canal footpath.
- Relatively low crime development.
- This property has spikes, anti-climb paint, CCTV.
Road layout – footpaths

- Although footpaths within developments increase crime risk...
- Careful when closing or re-routing footpaths following re-development.
- New cul-de-sac had closed access to busy walkway.
- Fieldworkers witnessed people climbing (rear garden fence) to gain access.
- Anti-climb paint not preventing problem.
Road layout – gated developments

- Gated developments viewed by residents as safest option – research did not confirm this.
- Detailed analysis – unpopular with planners, unsuccessful at minimising crime.
- Planners felt privacy could be achieved using subtle techniques and expressed view that they would not repeat this design.
Main problem was gating at boundary but little further consideration for crime prevention.

- High internal connectivity.
- Dark, narrow alleys with no surveillance.
- Reliance on gates alone.
• Security of gates compromised by poor positioning of street furniture, street signs and utility boxes.
• Climbing aides for offenders.
• Analysis of crime data showed that properties near to these points were the most vulnerable.
The majority of research supports the notion that being located on a development with **high levels of connectivity increases** risk of crime.

**True culs-de-sac** experience the **lowest** levels of crime.

**Leaky culs-de-sac** experience the **highest** levels of crime.

**Sinuous culs-de-sac** are safer than linear.

**Gated developments** do not experience lower levels of crime.

**Footpaths** which run at the **rear and side** of properties increase vulnerability.

Footpaths can be included within a development without increasing crime risk **IF planned in close consultation with the police** – key to avoid **rear** footpaths.
Why does this matter – policy and practice?

- Why does it matter to be specific regarding impact of individual design features on crime.
- Won’t there always be differing findings in research.
- Becomes a problem where conflicting findings make it difficult for practitioners to know what guidance to offer or what decisions to make.
- UK has seen progress in convincing agencies that you should design in crime prevention, but much slower to confirm HOW.
Why does this matter – policy and practice?

- Become a greater priority amidst **rapidly changing** system within planning for crime prevention in UK.
- Changes in **police** role and **planning policy**.
- **Police**: reductions in budgets
  - Review of ALO/CPDA in August 2009 = 305 posts.
  - Not without problems, but police able to offer advice on most new developments, analyse police data and share knowledge of local crime problems.
  - Two year period of cuts, crime prevention vulnerable.
  - Now = 230 posts.
- Concern regarding the **resources that remain** to offer advice regarding crime prevention within design?
Why does this matter – policy and practice?

- Compounded by major changes in planning system: deregulation to stimulate growth and give power to communities (cause some concern).

- **Localism Act (2011):**
  - Thousands of pages of planning guidance (PPGs and PPSs) replaced by 50 page *National Planning Policy Framework*.
    - Potential loss of valuable evidence-based guidance.
  - **Neighbourhood Plans.**
    - “Allow communities to come together through a local parish council or a neighbourhood forum and say where they think houses, businesses and shops should go, and what they should look like” (DCLG, 2011, p. 11).

- To what extent do local communities **possess the knowledge** to make evidence based decisions (with less guidance from police).
• Strong view that it is essential, with reduced staff and increased responsibilities, that communities have evidence to make choices.

• Decisions they make will influence quality of neighbourhood for years.

• First step production of series of clear/simple Briefing Notes (Home Office, ACPO, CABE).

• To be used by those making decisions.
Thanks for listening

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