MJGleeson

the urban regeneration specialist






MAXIMISING SECURITY THROUGH DESIGN

Preamble

Design Council Cabe has issued the results of a major research study looking at the impact of the design of modern urban housing developments on crime. The Home Office-funded study has identified key areas where poor design, such as rear parking courts, can lead to an increase in crime, anti-social behaviour and neighbour disputes, all of which put added strain on local police resources.

The results of the research are intended not only to aid homebuilders and designers, but also police forces – allowing them to influence the layout and design of proposed new neighbourhoods.

The study was run in collaboration with the University of Huddersfield, working with crime prevention design advisors in local police forces, planning authorities and Gleeson Homes & Regeneration. It looked at housing developments in Greater Manchester, Kent and the West Midlands and considered crimes including burglary, theft of and from vehicles, robbery, theft from the person, assault and criminal damage. Although the project did not set out to include anti-social behaviour or neighbour disputes, much of the feedback from local police and planners showed incidents were more common than actual recorded crime and resulted in police or local authority resources being used to attend and resolve matters.

Developer Gleeson Homes & Regeneration which helped advise on the research project, is already applying the principles. Gleeson state: “It [the research] provides much needed clarification on the impact of housing design on crime and has led us to re-assess our design values and produce our own internal security design guide”.

This guide follows the principles set down by the Home Office / Cabe study.

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1. Introduction

This document has been prepared by Gleeson Homes to demonstrate its commitment to enhancing the security of its homes and developments. In producing this document, Gleeson has consulted with its customers and police architectural liaison officers. Reference is also made to the Secured by Design publication 'Homes 2016'.

Gleeson has a wealth of experience in creating safe neighbourhoods in areas of social and economical deprivation and know that achieving security through design is more than a series of standard details and security recommendations, it is also about creating an environment that promotes good social behaviour and encourages a sense of community, ownership and pride which in turn encourages self policing of a neighbourhood.

This document will;

- Highlight typical crime and disorder issues in areas of housing regeneration.
- Demonstrate a clear understanding of the issues of crimes and criminal activity.
- Identify design solutions which reduce vulnerability to crime.
- Allow Local Planning Authorities (LPAs) to use the information to help with decision making and enable the planning process to run more smoothly.
- Assist in the consultation process.

2. Tenure

It is very important to understand that the needs of different types of tenure can vary significantly and this can affect the way in which security issues are addressed.

Whereas the occupiers (and the owners) of Local Authority or Housing Association or private rented housing may have particular needs they will differ in some significant respects to the needs of owner occupiers.

People in owner occupation have an understandably different attitude to their property to tenants.

Owner occupiers have exercised choice in purchasing their home. It is a source of pride, it belongs to them, they understand that they must maintain it in good order and the present and future value (and hopefully increase in value) is also dependent on the care and the reputation of their street. Their involvement in their property therefore extends well beyond their front boundary.

They are quick to report breaches of restrictive covenants by their neighbours because the value of their property may be adversely affected.

Home owners can be broadly split into two categories; Stayers and Movers:-

Stayers are those who intend to live in the property until they die. As time goes by and their mortgage repayments become more affordable they will find ways to enhance their home. A typical stayer will usually spend money enhancing their property in the following order:-

1. A conservatory
2. A new kitchen
3. A garden shed
4. A block paved drive

Movers are those who intend to stay in the property for a limited period and move-on to something bigger in a few years. They may purchase a conservatory because it increases the floor area and therefore the value of their property but it is unlikely that they will spend any money on the other items because they perceive that they don't add to the potential future sales price of the property.

The one thing that stayers and movers have in common is that they care about their property and the environment in which it stands.

On the other hand Local Authority or Housing Association or private rented tenants may not be entirely free in choosing where they are to live. They do not own their home and must wait to be told when their home is to be up-graded. Their reason for renting is often short term, such as a relationship or family breakdown or a change in financial circumstances. It is understandable that, although there are exceptions, a tenant will generally have a different attitude to their home to an owner occupier.

3. Your Watch

We recognise that traditional "Neighbourhood Watch" schemes have become an outdated concept. In the particularly vulnerable areas in which develop new purchasers can be reluctant to take up the mantle of 'coordinator' for fear of being labelled a "snitch". They can be uncomfortable with the idea of hosting new neighbours in their own home and sometimes they simply do not have the time. With the advent of new technologies and the rise of social media Gleeson have taken the opportunity to pioneer a unique alternative.

Gleeson YourWatch is a social media based network created to keep our residents and the neighbourhood safe by sharing information. We act as the coordinator of the information sent to us by our customers and we redistribute it to scheme members and, where appropriate, the police. We now have more than 1000 subscribers to the Gleeson YourWatch Network.

4. Security Considerations and Crime Statistics

Gleeson Homes and Regeneration specialise in building homes for sale in areas of industrial decline and social and economic deprivation. In the design of their developments, Gleeson consider crime and security issues which are relevant to their context such as;

- Burglary
- Criminal damage
- Anti-social behaviour
- Unauthorised access to private space
- Robbery to person
- Bogus callers/distraction burglary
- Theft of/from parked cars

Crime Statistics

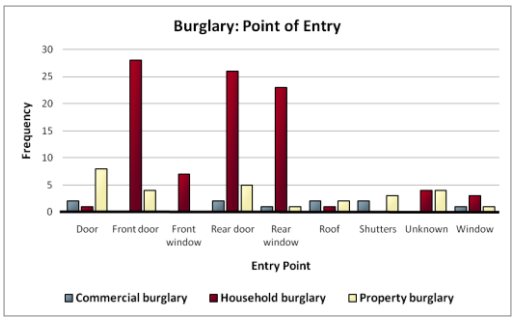
Police Crime statistics provide invaluable data on these crime and security issues. A typical set of crime figures recorded over 1 year in a typical location for a Gleeson urban development, prior to us building and selling new homes are;

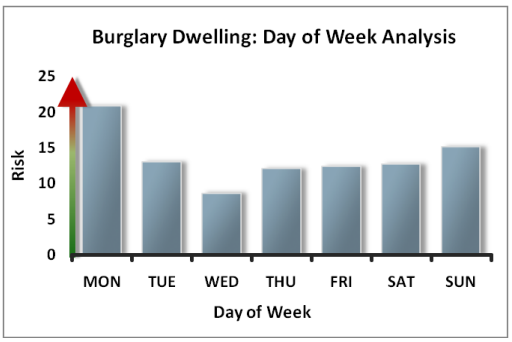
- 5 acts of car crime per month
- 8 acts of domestic burglary every month
- 15 acts of criminal damage every month
- 8 acts of less serious wounding per month

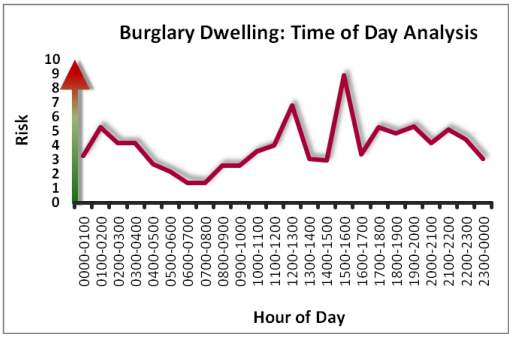
(Figures and the following tables and graphs taken from a Crime Impact Assessment prepared for Gleeson Developments at Culcheth Lane Manchester by Greater Manchester Police. Figures based upon a 1km sq area around a proposed development site)

These typical crime figures depict high levels of crime and Gleeson Homes and Regeneration have responded with appropriate security measures. Understanding of the way in which these crimes are perpetrated ensures a better solution through design. The modus operandi (MO) of typical crimes carried out in neighbourhoods are summarised in the next section.

4.1. Burglary Analysis and Understanding







Entry: Typically, the vast majority of burglaries to dwellings were achieved through front and rear doors, followed by rear windows.
Time of Day: The time of highest risk for burglaries were between 12:00 and 21:00, with a similar peak in risk at around 01:00. Daytime risk could be associated with properties being vacant whilst people are at work, resulting in less local surveillance and a burglar's reduced risk of being seen/caught.
Day of Week: Burglary risk was quite uniform through the average week, with the exception of Monday, where a sizeable increase can be seen.

Gleeson's Strategy for reducing Burglary:

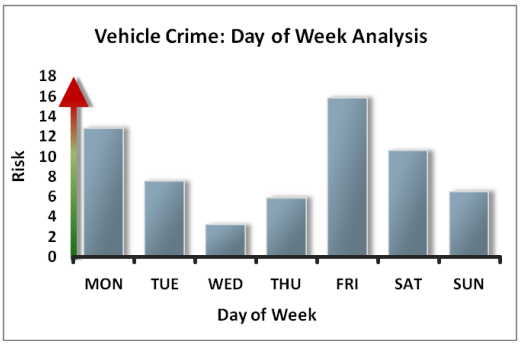
a) Rear gardens grouped into "secure zones" which are open to observation by a number of properties to enable an intruder to be easily spotted;
b) Minimal boundary treatment to frontage to give natural surveillance and create a sense of ownership of the street.
c) Defensible planting where appropriate.
d) Main aspects and doors facing the street including use of 'corner turn' houses to improve surveillance.
e) Gravel drives which provide an audible alert to occupants of intruders.
f) Physical security and specification of doors, windows, lighting, glazing, locks etc.
g) No climbing aids such as low fences, walls, bin stores adjacent buildings etc
h) Good positioning of dwellings to increase the sense of ownership and surveillance, providing a major deterrent to burglary.

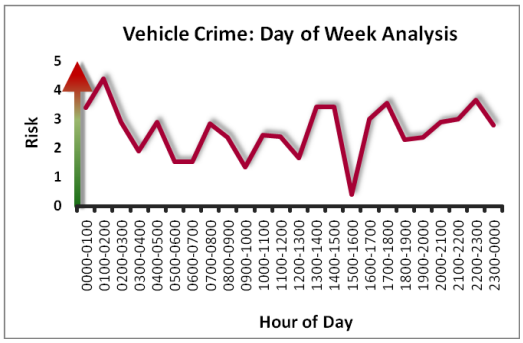
Burglary M.O.s:

Below are typical methods for committing burglary, along with measures which Gleeson employ to prevent the crime.

- *Accessing rear of property through insecure gate, and smashing glass to unlock window.*
  There are various ways of securing gates, the most typical being a pad-lockable bolt to the inner face. To improve security of rear gates the bolt is located at mid-level so it cannot easily be accessed externally. Also, if gates are likely to be used for general egress from the property they are lockable on both sides, so a resident can secure the gate when they leave.
  In addition, lockable ironmongery is used to accessible windows so that the resident can further secure openings to their house.
- Where gates to rear gardens are required, they are positioned flush with the front elevation so that strangers are not concealed from the public eye.
- *Kicking-through front doors.*
  Doors are specified to recognised security standards to address this risk.

4.2. Vehicle Crime Analysis





Vehicle security is an important consideration. Typically, the riskiest times for car crime are Friday, Saturday and Monday; with a fairly uniform level of risk with regards to time of day

Car Crime

Car crime can take the form of theft of the car, theft from the car and criminal damage to the car.

Gleeson's Strategy for reducing Car Crime:

Gleeson recognise that car parking is safest when located in an attached or adjacent garage or within the curtilage of the home.

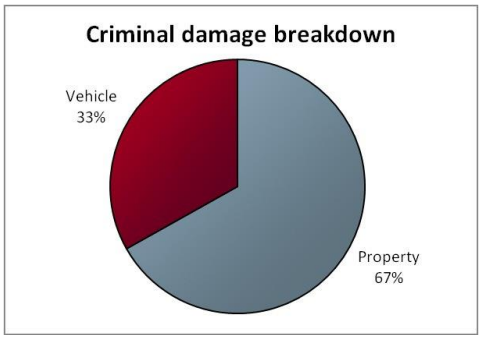
Customers want to be able to see their car from the home so on Gleeson developments, parking is on-plot and to the side of the property wherever possible to ensure clear, unobstructed views over the frontage and the street.

The majority of Gleeson's homes have a side window to ensure that the driveway is overlooked and where appropriate homes are sold with a garage.

On street parking can encourage incidental damage and vandalism to cars such as tyre slashes, paintwork damage, wing mirror damage etc., so this type of parking provision is avoided.

Gleeson also avoid the use of parking courts as they can give rise to anti social behaviour and often give access to rear gardens. Such courts are not usually regarded as part of the home and are often areas in which litter and clutter can accumulate.

4.3. Criminal Damage

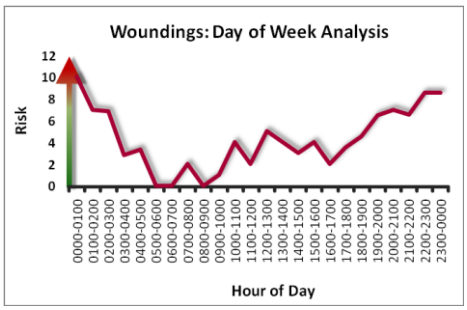


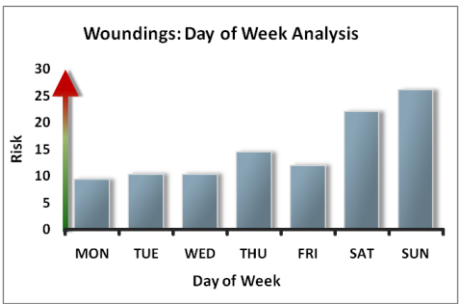
Two thirds of criminal damage is committed against property and the remaining third is committed against vehicles. Both types of criminal damage are addressed in different ways. Listed below are examples of ways in which criminal damage is perpetrated and ways in which it can be avoided;

Criminal Damage M.O.s:
Damage to windows. (Very common)
Windows are a valuable tool to offer natural surveillance over an area. Gleeson's layout design avoids windows being positioned in secluded areas and provides secure frames with locks to openers and with good specification double glazing.

Car windows breakage.
Gleeson ensure that parking spaces are located where they can be seen by their owner (and other dwellings where possible) to deter miscreants. Open frontages to properties provide additional surveillance.

4.4. Robbery and Woundings





Instances of wounding are more common on weekends and generally uniform during the week. The time of highest risk for such crimes is around midnight, though the risk increases during the afternoon/evening of the average day.

Gleeson's Strategy to minimising risk of robbery and woundings:
A typical housing layout by Gleeson will not incorporate pedestrian routes which are not overlooked, or permeable (open) cul de sacs, but will ensure that natural surveillance is optimised throughout its developments thereby helping to reduce the risk of robbery to people. Wherever possible, Gleeson's strategy is to:-

- Utilise direct links to local transport routes and ensure optimum visibility towards routes.
- Avoid using isolated footpaths and plan housing in small closed cul-de-sacs which provide safe pathways along the highway itself.
- Provide natural surveillance opportunities over pedestrian routes.
- Utilise open frontages to provide surveillance over the highway and adjacent and opposite front gardens.
- Provide lighting to a sufficient level and uniformity to eliminate dark spots.
- Avoid designing recesses, blind corners and enclosed alleys, which can reduce the distance a 'potential' victim can see in front of them.
- Ensure footpaths are as straight, wide and open as possible to increase sightlines and allow pedestrians to make rational choices over the route they take.
- Minimise the number of escape routes in a design. The closed cul-de-sac approach adopted by Gleeson provides this.

5. Design and Layout of Housing Developments

Housing Mix; Gleeson's housing schemes provide a carefully arranged mix of house sizes and types to ensure maximum, constant surveillance is achieved through a varied demographic. For example, a housing scheme which is marketed entirely towards professional couples is likely to create a neighbourhood which is empty during the day. Conversely, homes designed with young families and pensioners in mind are more likely to be occupied during the day.
Streetscene; Gleeson's houses are predominantly a mix of semi detached and detached properties. These houses have great advantages over terraced properties which need passageways for access to rear gardens and have bins stored at the front which can act as climbing aids.
Materials; Properties showing signs of disrepair and physical incivilities are more likely to experience crime. Gleeson select low maintenance building methods and materials to avoid this.
Layout; Gleeson utilise a number of simple tried and tested design principles to optimise natural security to street layouts such as;

5.1. Good visibility and overlooking to all areas;

Both the street, car parking and gardens will have many windows overlooking to aid security and deter criminals or miscreants.

5.2. Strong physical barrier to house line and rear gardens;

Gleeson creates secure zones of rear garden areas. This works very well when the boundaries of a group of usually 5 to 7 houses form a secure zone which can be well monitored from all of houses within that group. Each of the houses overlooks and monitors up to 7 neighbouring rear gardens and vice versa. Garden fences within the secure area are low to aid vision. This overlooked area will deter trespassers.

This drawing shows part of a site divided into defensible and observable zones.

The red line indicates 1.8m high fencing with gates (not shown) where appropriate.

The boundary lines between rear gardens use low, transparent fences to create an observable zone.



Where necessary, Gleeson will construct either a robust fence, gate or garage between the houses to create a secure barrier between the street and private rear gardens. This will make it difficult for an intruder to enter whilst creating an observation zone where unusual activity can be seen or strangers identified.

5.3. Open frontages

The implication of the words “home ownership” don’t stop at the curtilage of the plot. Home owners have invested in not only their home but also their community and they consider themselves to be stakeholders in their community.

Ownership of the street is a requirement of home owners and this is achieved by open frontages.

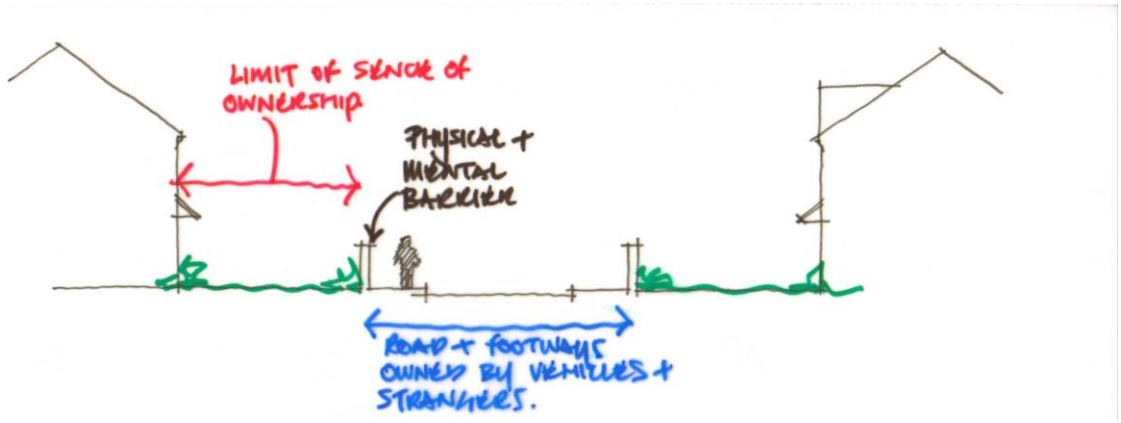
Front walls and fences create visual and physical barriers for home owners and safe corridors for vandals and intruders.

In rented schemes where there is a reduced desire for ownership of the street by residents and front boundary barriers are desirable they should be robust and vandal proof.

In home ownership schemes front garden barriers should not exist at all; the defensible boundary should be the frontage of the dwellings.

Open plan developments not only give ownership of the street to the residents they make a positive statement about the development itself. “We are a home ownership development and we are proud to be home owners”.

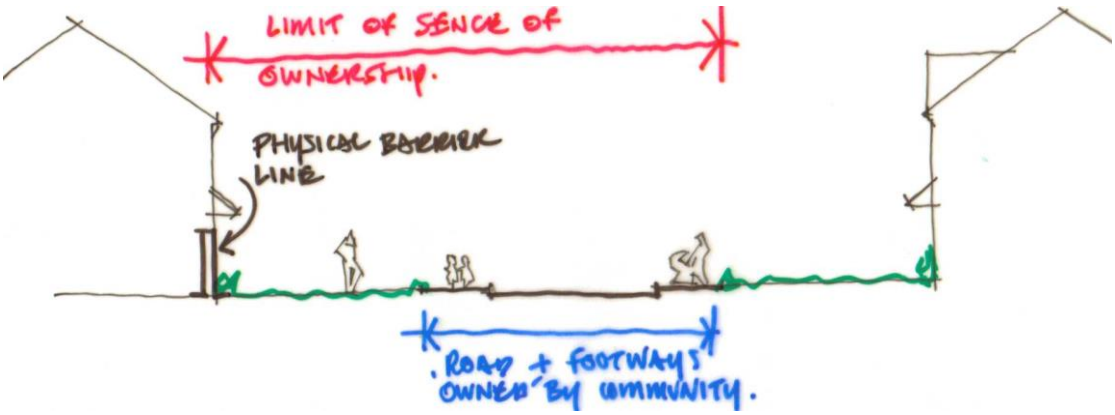
Pride in a development engenders community involvement and communal responsibility towards security.







Closed frontages pass on ownership of the street to vehicles and strangers





Crime levels to frontages of houses which are well overlooked and monitored by the street are low because doors, windows and vehicles and of course, potential intruders are easily observed and monitored by neighbours.

5.4 Cul de sacs

- Small closed cul-de-sacs offer the best layout for housing in terms of security.
- This type of road layout creates small, safe and quiet mini communities where a stranger would be noticed.
- They naturally create a sense of community, ownership and responsibility and an environment that a burglar is least likely to operate in.
- Open cul-de-sacs (with a footpath link at the end) create ideal getaways for criminals.
- Developments with highly connected roads and footpaths – over permeable sites – make crime difficult to control.

6. Physical Security

The following component specifications are provided by Gleeson as standard to achieve an appropriate level of physical security:

6.1 Doors

- Front doors to properties are compliant with Approved Document Q of Building Regulations (PAS24: 2016) with features such as multipoint locking mechanisms, meaning access is only possible with a key.
- Front doors have either integrated windows, fixed sidelights or door viewers.
- Chain limiters are included as standard.
- Letterboxes are located a minimum of 400mm away from internal ironmongery.
- All glazing within, or adjacent to external doors includes at least one pane of laminated glass to spec P1A in accordance with BS EN 356:2000.

6.2 Windows

Ground floor and easily accessible opening lights (escape requirements permitting) are key lockable. All windows are internally beaded and compliant with Approved Document Q of Building Regulations (PAS24: 2016).

6.3 Garages

If garages are to be featured in the scheme, the internal connecting door will be compliant with Approved Document Q of Building Regulations (PAS24: 2016).

6.4 Boundaries

- Any rear dwelling boundaries abutting public space are 1800mm high.
- Boundaries between the rear of dwellings are formed using 600mm high divisional fencing.

- Boundary treatments do not have design features that may act as climbing aids.

- Where applicable, low fencing/railings which adjoin high fencing is tapered upwards, so that the low fencing can't be used as an aid to climbing the higher fencing. This is typically seen in the proposal where front boundaries join rear boundaries.
- Wherever used, garden pedestrian gates can be lockable by way of a pad-lockable bolt at the midpoint of the internal face of the gate.
- Wherever used, gates to rear curtilages of dwellings are lockable from both sides, to allow people to secure their gardens when leaving their house by car.

6.5 Landscaping

- No obstructions to visibility across the unbuilt parts of the site.
- No planting exceeds 1m in height.
- No hard landscaping that could inadvertently create seating or loitering spots.
- No planting or external furniture, i.e., bollards or seats that will aid climbing over boundary treatments.

6.6 Lighting

- Lighting provided to adopted highways and footpaths and private estate roads in accordance with BS5489 to eliminate any potential pooling or shadowing.

6.7 Construction

- Careful consideration is given to securing the site during construction, to prevent unauthorised access and theft of equipment.
- Gleeson locate temporary secure hoardings to key areas of the site and adopt on site security and health and safety measures including permanent security personnel on certain sites.

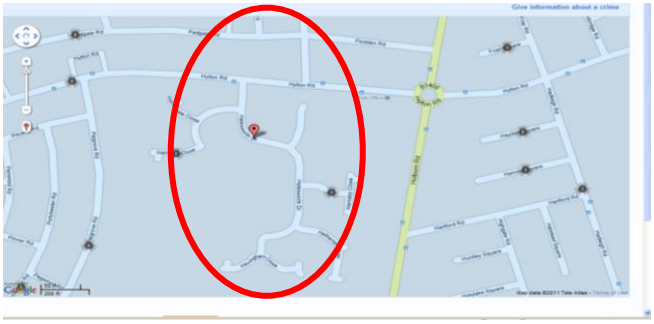
7. Case Study

Havelock Hospital Site, Sunderland

The Havelock Hospital Site built in 2003 by Broseley Homes is a proven example of how Gleeson's approach to designing out crime is successful. The housing development is located within the Pallion ward of Sunderland which is one of the most deprived areas of the City. Similar to many areas in which Gleeson builds homes, the ward suffers from low levels of employment and high levels of crime.

To determine the scheme's effectiveness in lowering crime levels, we consulted the police.uk website which publishes national crime figures for local neighbourhoods and highlights the type of crimes which have been committed in each location. The website states that in the Pallion area in May 11 there were 360 crimes reported which included 17 incidents of burglary, 189 reports of anti-social behaviour, 15 vehicular crimes, 27 violent crimes and 112 unspecified incidents.

The Havelock Hospital development, which comprises over 250 homes, experienced just 2 reports of antisocial behaviour in the same timeframe.



The Broseley development was built in accordance with the design principles set out in this report and included features such as:

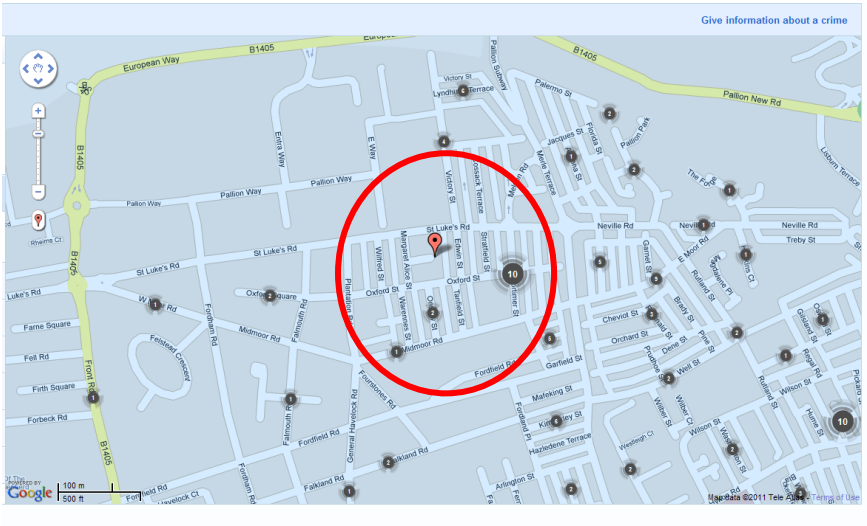
- Minimal boundary treatments to frontage;
- closed cul-de-sac design;
- well positioned dwellings;
- a variety of house types;
- well overlooked roads and footpaths
- attached or adjacent garages to the home, and;
- on-plot car parking.



In comparison to the Havelock Hospital Site, surrounding similar sized neighbourhoods in Pallion experienced significantly more incidents of crime, as follows;

Minton Square

There were 15 reports of assorted crimes within this area, which consisted of 3 accounts of burglary, 10 accounts of anti-social behaviour and 2 accounts of violent crime.



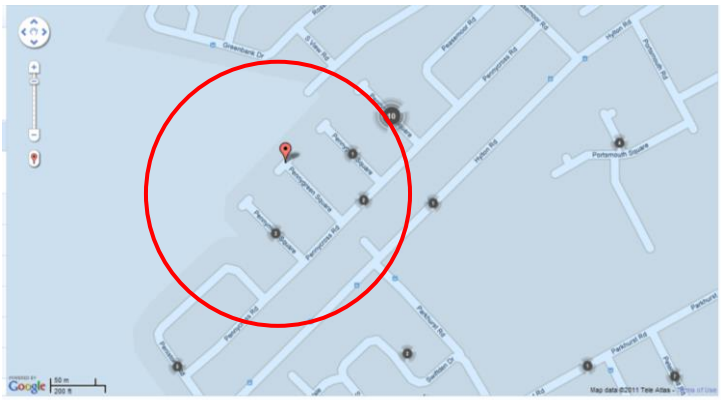
Unlike the Havelock Hospital development, this site primarily features 900mm high timber fencing to the fronts of properties, in contrast to the recommendation given by this report, which stresses the requirement for minimal boundary treatment to encourage natural surveillance and create a sense of ownership of the street by the residents. There is also limited on-plot parking and no garages, which can increase the opportunity for car crime as car parking is safest when located within the curtilage of the home.

As shown in the photograph below, the homes in the Minton Square area are similar in terms of size and type. This not only creates a one dimensional street scene with minimal opportunities for comprehensive street surveillance, but also limits the resident demographic, thereby preventing the creation of a neighbourhood which is active at all hours of the day every day of the week.



Pennygreen Square

16 assorted crimes have taken place within the area; 14 accounts of anti-social behaviour and 2 unspecified crimes.

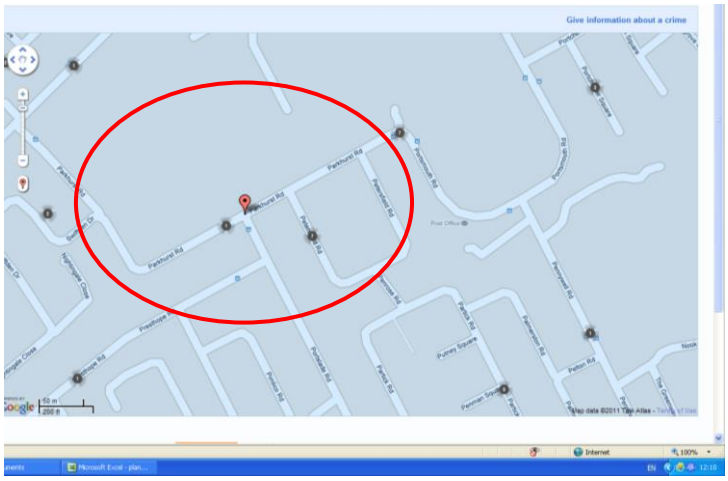


Unlike Gleeson's design principles set out in this report, Pennygreen Square incorporates a mixture of low walls, brick piers and railings as front boundary treatments. The properties are also of a similar type and laid out in a repetitive manner, thereby reducing surveillance of the entire street.



Parkhurst Road area

15 assorted crimes took place within the area during May 2011; including 7 accounts of anti-social behaviour, 3 accounts of violent crime and 5 accounts of unspecified crime.



Similar to the Pennygreen Square area, the road has a mixture of low wall, brick piers and railings. There are no garages and no parking within the curtilage of the property. In addition there are no designated on-street parking spaces, which could lead to inappropriate parking in front of a neighbour's home; this is one of the most common causes of resident disputes.

Not only are the properties in Pennygreen Square identical in type, they also appear to be tenanted social housing; this often means that there is limited financial or social investment in the neighbourhood. In areas like this anti-social behaviour is common as there is little or no ownership of the street by the residents.



Oxford Street, Sunderland

17 crimes were reported within this area in May 2011. They consisted of 3 accounts of burglary, 4 accounts of violent crime, 8 accounts of anti social behaviour and 2 reports of unspecified crime.



This road incorporates a mixture of low walls and fencing to the front gardens and 2.1m high brick walls to exposed side and rear gardens. The street pattern is highly permeable unlike a closed cul-de-sac approach which is favoured by Gleeson. It is well documented that highly connected thoroughfares maximise escape routes, increase the likelihood of burglary, robbery and wounding. There are no garages and very limited allocated parking on site.



The above examples show that crime levels in a typical area of regeneration alter from street to street. More vitally, it is evidence that our approach to reducing crime through considered design actually works.

8. Conclusions

By adopting the above design features, housing schemes by Gleeson Homes have taken account of CPTED and Secured by Design principles and demonstrate a commitment to incorporating good design practice to reduce crime and create safer, happier neighbourhoods.

9. Bibliography

- Crime Impact Assessments prepared for Gleeson Homes by Greater Manchester Police.
- Secured by Design' publication 'New Homes 2014'.