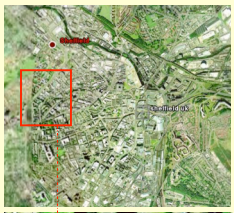
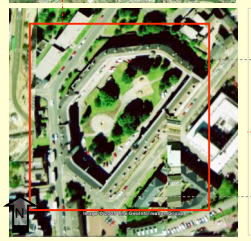
Housing Morphology in Sheffield

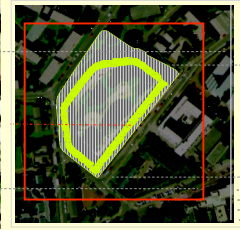
Edward Street Flats

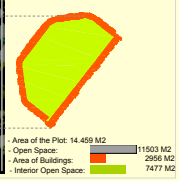
Fieldwork & Analysis carried out by Christian Beros, Eirini Rafailaki



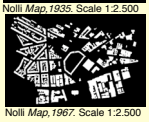
Edward Street Flats consists of 133 flats arranged around a central green/ play area. The majority of these flats are council or housing association owned although some properties are privately owned or rented. They are a distinct structure within St. Vincent's Quarter, with their arched *entranceways* and the brick and stone detailing of the facades with large sheltered interior green spaces.
At the South of the estate is Broad lane one of the main arteries in Sheffield which communicates with city centre. At the West side is the A61, a Highway which goes to the North of the city which act as a boundary between Wets and East sides of this city area. At North and West there are two undeveloped areas, both enclosed with opaque barriers. At the Northeast side of the Estate is a court yard and green areas which are part of Edward Street Flats. This areas are affected by the constructions and by the undeveloped lands.
The access to the flats is by a long corridor around all the building and the connections to the flats is determined by the topography of the area.



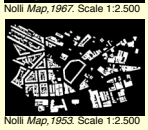




Nolli *Map,1935.* Scale 1:2.500



Nolli *Map,1967.* Scale 1:2.500



Nolli *Map,1953.* Scale 1:2.500

Nolli Map, 2005. Scale 1:2.500

Area Distribution

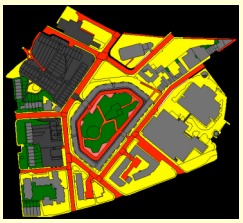
34.95%	Common Green
14.43%	Road
0.84%	Path
11.52%	Private Garden/Yard
24.55%	Building
13.7%	Other

There is high percentage of Public Space and under construction lands in the area and the area is mainly residential with small amounts of education facilities and leisure

Land Use

21.93%	Residential
47.59%	Public Space
10.33%	Communal Facilities
2.68%	Leisure
15.63%	Under construction
1.86%	Education

Most of the open space are green areas and also inside the estate is high area allotted as private garden.



VGA diagrams

In the case of Integration values, comparing with the observations made in Sheffield the graphic shows a good correlation with Broad Lane as the most integrated line in the system. It also shows the gradual segregation from south to north which ends in a segregated corner at the Northeast side of the plot. Besides the highway appears disconnecting west and east sides and giving more deepness to the area in relation with the main street.

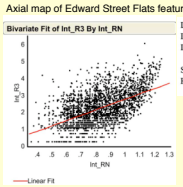
In the connectivity analysis the diagram is showing Broad Lane as the best connected way in the system and the North side of the estate in a deeper position. This correlate better with the field's observations in which it has been distinguished the north corner as an unconnected space with a lack of control and surveillance and Broad lane as the main road in Sheffield.
In both cases the segregation and disconnection of the Northeast corner correlate with the observations and represents a phenomenon that could be generated by the undevelopment lands surrounding the estate and the deepness of this corner, it has also an influence of the lack of people passing-by and the lack of surveillance on the street.

Axial analysis

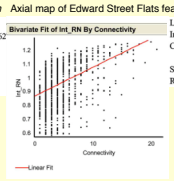
Axial map of Edward Street Flats featuring *global integration*

Axial map of Edward Street Flats featuring *local* integration R3

Axial map of Edward Street Flats featuring Connectivity



synergy



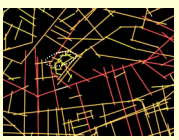
intelligibility

The distribution of global Integration value in the lines of the axial break-up indicates that Edward Street flats are surrounded by very well integrated lines (especially in the south and east), while the complex itself is a segregated place due to the configuration (semi-circular shape) of the buildings. The processed of *local integration R3* demonstrates that the deepest part of Edward Street flats (the green park) is a segregated place. Therefore, it could be stated that due to the configuration of the Flats there is a poor relationship between them and the neighbors and that also block permeability, transforming the inner park as a well controllable place.

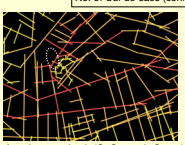
Number of axial lines :2366
Mean Global Integration (Radius n) :0,7983
Mean Local Integration (Radius 3) :1,7989
Mean Depth from Most Integrated :11,7866
Mean Integration (Radius-Radius) : 1,1972
No. of Cul-de-sacs (connectivity=1) : 311

Angular analysis

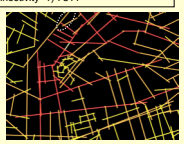
The angular step depth from three different lines of the system (*Brook Hill, St. George's Street and Upper Allen Street)* is measured. From all maps reasonable information is extracted, that agrees with the observations: the lines close to the two arched entranceways of the Flats have a higher value than those which cross the open green space inside Edward Street Flats.



Angular step depth (Brook Hill)



Angular step depth (St.George's Street)

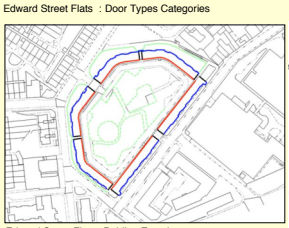


Angular step depth (Upper Allen Street)

Edward Street Flats : Door Types Categories

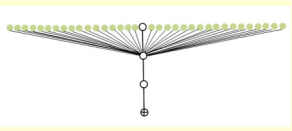
The complex of Edward Street Flats is a multiple-entry configuration where the two arched entranceways are the main entrances of this enclosed shape. All the main entrances and the service doors of the units are located in the interior of this semi-circular configuration, which because of the hilly ground of Sheffield could be represented as a spiral. In the centre of this spiral there is a green park in which all the units have immediate access. This spatial configuration could be considered as a form of 'Panopticon' because of the total visibility that is provided from its centre (or simultaneously surveillance that is *supposed* to take place by the occupants).

Edward Street Flats : Connections

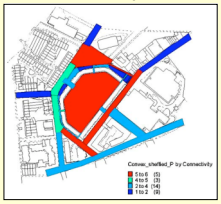


Edward Street Flats : Bulding Facades

In Edward Street Flats the green space in the centre of the complex *seems* to be a very **controllable space**, as there are all the front doors and windows- however, the fact that in front of every unit there is a common corridor (which means that permits visibility to the interior of the houses) has an impact on the behaviour of the inhabitants. The later prefer to have a view of the surroundings rather than of the park. From personal observation almost all the windows looking towards the park were closed, while the windows in the perimeter of the complex were open. Taking that into consideration, it may be argued that this complex, despite its spatial configuration, is not actually a 'Panopticon' as the central green space is not in fact high controllable.



Edward Street Flats : J-graph from outside to the main entrances



Edward Street Flats : Convex Analysis featuring connectivity

The convex analysis of a convex break-up demonstrates that the arrangement of the buildings (closed configuration) creates one convex space of high connectivity in the centre of the complex (in red colour), Speaking in terms of this *microscale,* the break-up indicates that there are also highly connected spaces outside Edward Street Flats, in the east-south part, because of the adjacency to major streets of the city (such as Brook Hill or St. George's Street). Low-connected spaces (in dark blue colour) are those spaces in the west and south part of Edward Street Flats. As main factors for the cause of low-connectivity could be considered not only the 'boundary' of height (the topography of Sheffield), but the 'boundary' of the under development areas as well (landuse). It could be stated that the above are *two-dimensional boundaries.*

Depicts the connections between *outside* (Siddall Street), and the residential premises of Edward Street Flats (in black colour). Outside is represented as circle with cross, the main entrances of the units (*access* and *permeability*) as transparent green dots, and the *convex spaces* (one finds from outside towards the deepest part of Edward Street Flat) as unfilled dots.
The *justified permeability graph* drawn from the outside (again the place with the highest values in terms of visual steps from the most integrated corner in the system has been selected). The graph from the *outside* demonstrates that three steps all units are accessible. Simultaneously, it could be also stated that the deepest space (in the centre of the semi-circular configuration) is very controllable.

Boundaries effects
Edward street flats

In terms of ***land use*** the undevelopment lands surrounding Edward street flats have an effect in the deterioration of the outside of the estate due to the lack of movement and people passing by the space which creates a lack of safety.
In spite of the panoptical shape of the estate there is a lack of ***visual control*** at the internal space due to the sights preferences of the dwellers, this results in a low controllable space.
The difference in height due to the ***topography*** of the system determine a lack in visual connectivity creating a geographical border, this increase the deepness of the North corner which meaning is a segregation and disconnection on this space.

Classification of Boundaries (Matrix)
As a final conclusion the boundaries founded in "Red Bricks" and "Edward Street Flats" are classified in three types or "dimensions" depending in its shape expression and influences in the spatial and social structure of each city area.

	Morphology	"RedBricks"	"Edward Street Flats"
1D		High Ways	High Ways
2D		Parks and big urban areas	Undeveloped Lands
3D		Facades	Facades / Topography