8

Section 8

8.00 Larger Footprint Buildings

This building type includes: foodstores/superstores, retail warehouses, warehouses and industrial buildings, larger scale offices, large scale community buildings, schools and colleges, sports and fitness centres, leisure and entertainment centres.

8.01 Building types

8.01.01

Conventionally, these buildings have common characteristics:

- Deep plan: usually on both axes, with wide spans on single storey buildings (often multiples of spans of approx 15–40 metres).
- Low rise: usually single storey with high eaves/parapet (approx 5–9 metres) or 2–3 storeys if offices etc.

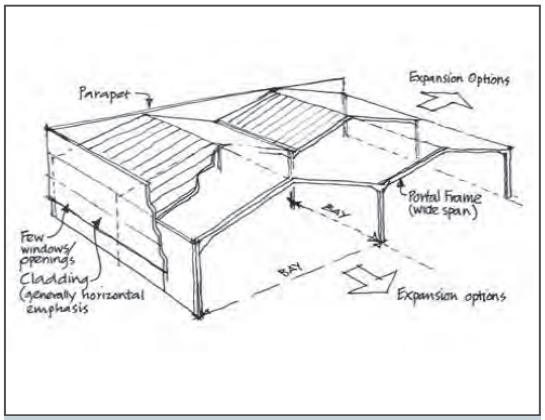


Fig 8.01 Conventional Large Footprint Building

- Elevations of horizontal emphasis with flat or low pitched roofs and an absence of windows, either or conversely, some types have extensive areas of glazing comprising large sheets of glass). In both these cases the scale and proportions of these buildings are considerably larger than most building types.
- Most building types require high levels of visibility and recognition for commercial reasons. They also have a relatively short design life, which influences the choice of cladding materials
- These buildings, either individually or in groups are freestanding, set back from the boundaries of the site and sited in a landscaped setting.
- Due to their deep plan and enclosed nature, most buildings rely on a high level of artificial lighting and air conditioning.
- They rely on high levels of commuting, predominantly by car and thus require large areas of car parking, often in front of the building.

8.01.02

Many types are built to accommodate servicing by heavy goods vehicles and the vehicular supply chain. Therefore they require large areas, with generous roadways and junctions to handle such vehicles.

8.01.03

Due to their size, scale, materials and accessibility, deeper plan buildings are likely to have a high carbon footprint. These factors present considerable challenges for the planner and designer in the relationship of the building with its rural, urban or edge of settlement setting, in terms of their physical or visual impact.

Fig 8.02 Roof profile integrating photovoltaics and window shading on south facing elevation.

8.02 Aims

8.02.01

Within the Development Strategy non-residential developments larger than 1000m² will be required to meet BREEAM Excellent or the equivalent nationally recognised standard (if introduced) for all elements.

8.02.02

New buildings should maximise the use of sustainable construction in terms of structure, locally sourced building materials, the use of renewable energy, water and drainage efficiency, and waste management.

8.02.03

The development proposals must demonstrate accessibility by forms of movement other than the car, encouraging cycle and pedestrian movements. This aim should influence the location, siting, layout, mix of uses and provision of facilities for the development. All parking generated by the development must be accommodated on site.

8.02.04

The footprint and form of proposed buildings should be designed to optimise daylighting and natural ventilation.

8.02.05

The development proposals should ensure that whilst they address the aims above, they also ensure that the Placemaking Principles, set out in the Design Guide, are an integral part of the evolution of the design.

Fig 8.03 Large span foodstore with structural bays expressed and south facing walls recessed to create shading. Note also large glazed areas allowing daylighting and creating an active frontage.

8.03 Context

8.03.01

The Placemaking Principles section in the Design Guide provides information regarding the appraisal of both the site and its setting. Consideration of this ensures that the development is as sustainable as possible, and that it relates well to its adjacent uses and to the townscape and/or landscape context.

8.03.02

In urban areas, relationship to the existing facilities, roads and access infrastructure will be critical, with access by large vehicles having a potentially negative impact on the street and in terms of noise. Street scene considerations will require analysis of existing urban form, grain, heights, frontages and views.

8.03.03

In rural and urban fringe areas, long views and skylines will require analysis. Consideration of the use of existing landscape features, colour and glare may also be critical. Landscape design should complement the setting, rather than the application of standard 'business park' solutions. Consideration of the creation of shelter and the continuity of biodiversity should also require analysis.

8.03.04

Where buildings present the opportunity for a combination of uses, for example within a community building, consideration must be paid to cumulative uses and the impact the uses will have on the layout and design of the development, including the wider area. The design of such buildings should consider the future use, if possible.

Fig 8.05 Entrance to the foodstore incorporates a bus shelter left of the traffic light, creating some activity and continuity of street frontage. (Biggleswade)

Fig 8.04 Some large footprint buildings can be designed as free standing pavilions in a parkland setting, where their relationship to the landscape, including established trees, can enhance the scheme and be used to modify their environmental impact. (Cranfield University Campus)

Fig 8.06 Foodstore related to the scale of a footpath. Note the pedestrian/cycle entrance from the path. (Biggleswade)

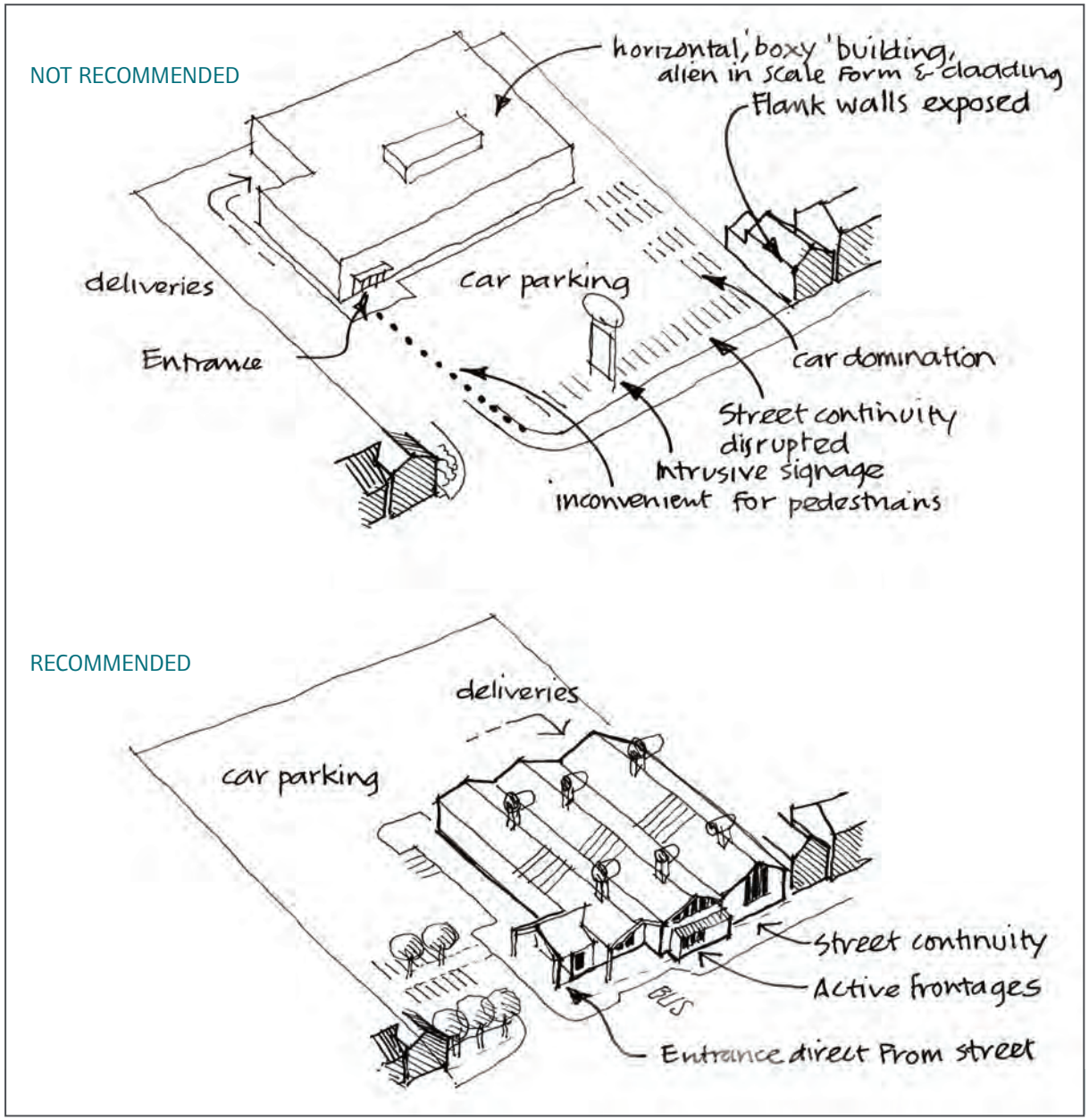
8.04 Design Principles

8.04.01

In urban areas:

A Development must contribute to street continuity and enclosure. In particular, buildings should be located in close relationship to the established street frontages and/or should recognise their 'role' in the street e.g. at corners, or terminating views. It may be that a building volume may be so large that it might be set in the 'backland' behind existing frontage development – with linking access.

B The scale and grain of large volume buildings can often be assimilated into the street scene by the elevational expression of structural bays and columns, subdividing large expanses of elevation. Bay widths addressing the street scene should be as narrow as feasible. The horizontal emphasis of elevational design should be avoided as this tends to draw attention to the excessive width of these buildings. These measures should aid the relationship to the grain of existing property widths.



C Large areas of flat roofs should be avoided for the same reasons as above. The need for rooflights, photovoltaic arrays, natural ventilating/heat exchange cowls etc. should contribute towards roofline interest.

D The requirements for heavy vehicles to enter a site, to make deliveries and to leave a site can have a significant impact on the layout of a site, its interface with the street and junctions and street widths of surrounding streets. Vehicle tracking, minimum radii and sight lines and the requirements above, should be utilised to the full.

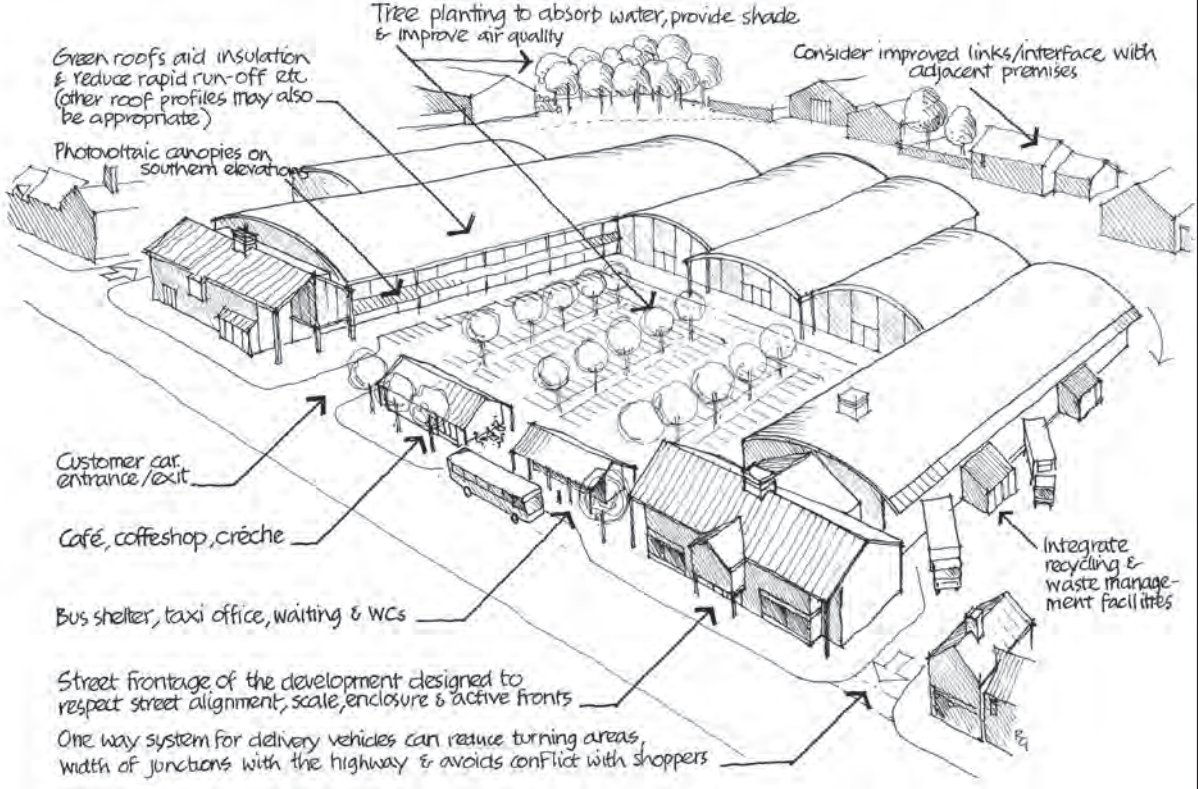


Fig 8.08 Indicative guidelines for larger footprint retail stores in an urban or suburban location. The development is grouped to (a) share parking, (b) maintain street continuity, (c) make efficient use of space, (d) create ease of pedestrian access between the stores and from the street, and (e) achieve sustainable objectives

E Where foodstores or retail warehouses are proposed, it is generally necessary to create separate access for delivery vehicles and customers, both in cars and on foot, to minimise the risk of accidents. However it is recognised on more restricted (often urban) sites, local separation is not always possible, or desirable, in terms of streetscape impact In these cases, perhaps the most effective measure is to manage deliveries when the retail outlet is closed to the public. Otherwise the siting of the manoeuvring area for HGVs should not conflict with pedestrian routes through the site or adjacent to pedestrian entrances. It may be necessary to reduce the speed of HGVs to walking pace, by platforms in the access way.

F Buildings accommodating offices and educational uses in particular will require high levels of daylight and natural ventilation. It is likely therefore that they will be characterised by wings of a relatively shallow depth, in varying configurations. These forms should lend themselves to being accommodated within the existing streetscape, having regard to the other principles in this section.

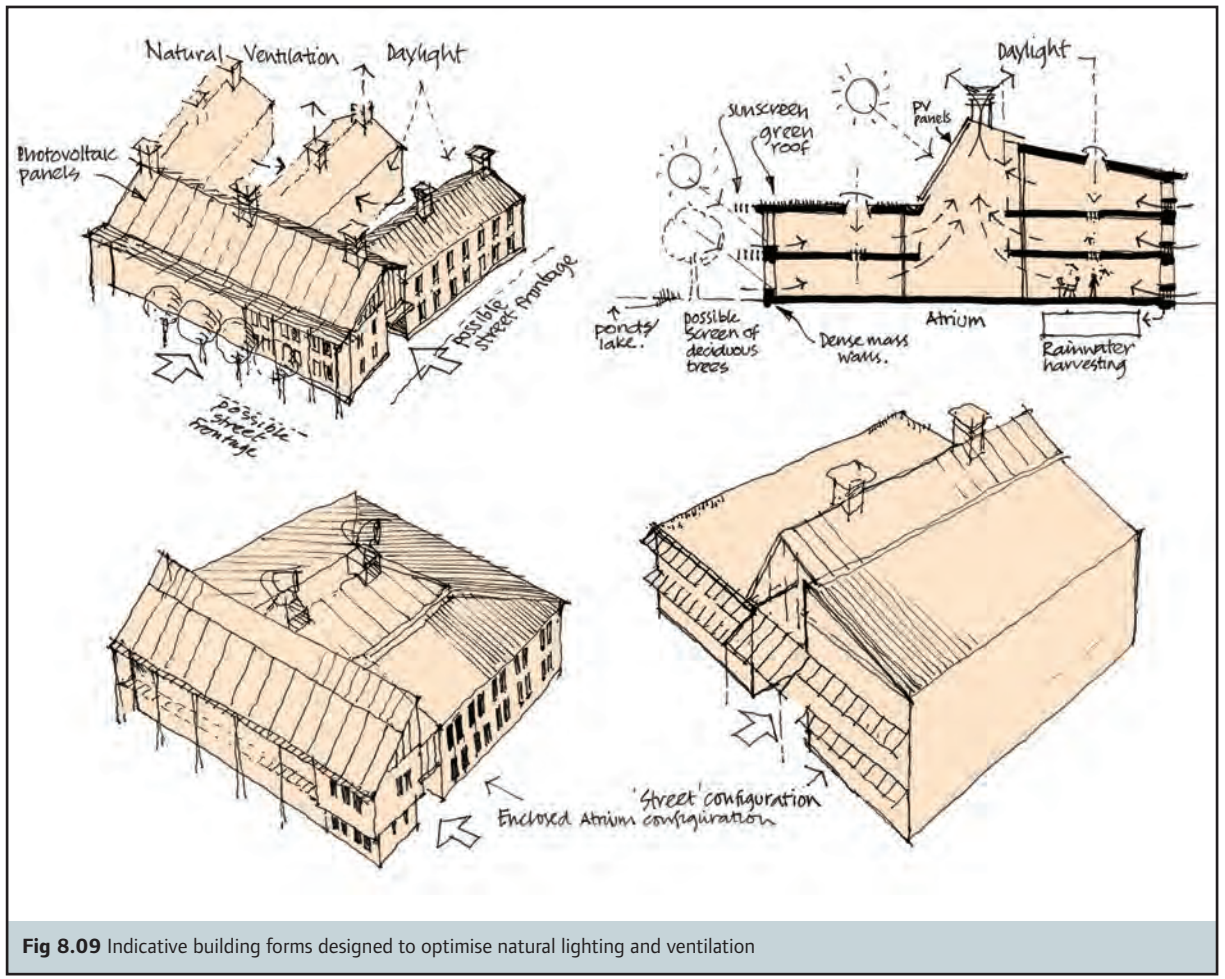


Fig 8.09 Indicative building forms designed to optimise natural lighting and ventilation

G The need to achieve a low profile will be important in many locations. Low pitches or segmental barrel vault roofs may be preferable to flat roofs. Green roofs should be considered in most locations, especially where the roofs are highly visible. Green roofs will act to reduce run off from larger roofs and have ecological gains by attracting and encouraging biodiversity. Further guidance on green roofs is included in the Green Infrastructure, Climate Change Adaptation and Sustainable Buildings Supplement

H The need for adjustable sun screening, creation of stack ventilation, the use of dense materials to ensure passive heat-store characteristics, and the use of building materials from sustainable sources, should be used to create elevational interest and also as a means to assimilate with the existing urban fabric.

I Waste management storage and processing facilities are likely to be significant issues requiring adequate space, screening and access. These should be shown on the design and layout drawings.

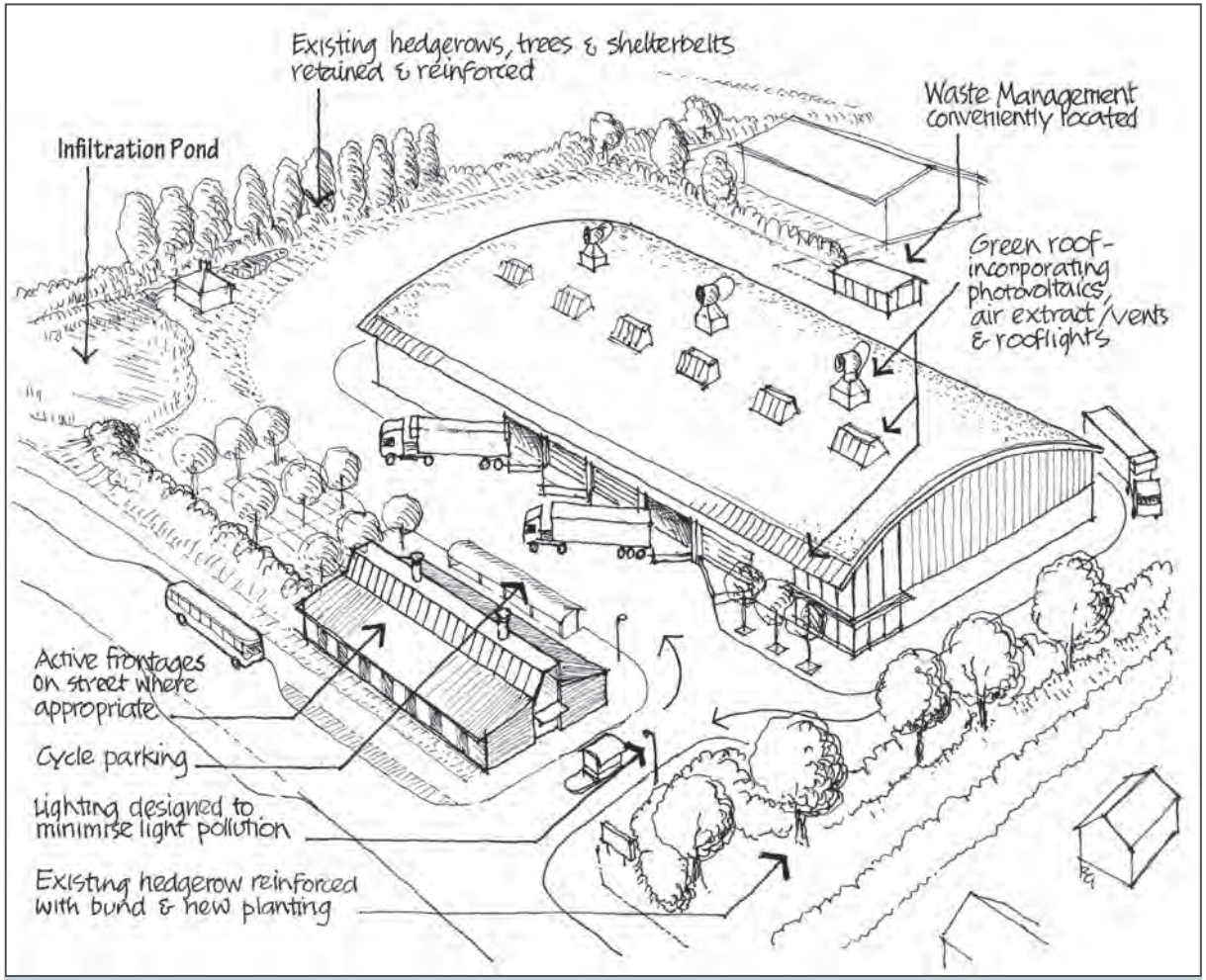


Fig 8.10 Indicative layout considerations for large footprint warehouses within an urban fringe context

8.04.02

In both urban, rural and urban fringe areas:

A Buildings should be designed to have active frontages facing the public realm: thus windows, display windows, escape doors, entrance doors and signage should be located at ground floor level.

B Groups of large footprint buildings should share and enclose external space to optimise the use of parking space, facilitate walking by avoiding the need to drive between adjacent sites/ buildings and minimise the impact on the street scene.

C Bus stops, bicycle parking, smart car/ electric car (with charging facilities), priority parking and easy, legible and direct pedestrian, bicycle and wheelchair access should be a priority.

D Rainwater harvesting and the management of water run-off from paved surfaces is a significant design consideration, given the large areas of roofs and surfaces. Inappropriate or inadequate drainage of a development is not legal. The management of water run-off should be considered from the source, at all scales across the site. For further guidance on SUDS refer the Green Infrastructure, Climate Change Adaptation and Sustainable Buildings Supplement

E Considerations of orientation for sunlight and the utilisation of solar energy should be balanced with the need of the proposed building to relate to the grain of the site shape and boundaries, the grain of adjacent properties and of the street frontage. The relationship of the building to the street should not result in awkward 'spaces left over'.

Fig 8.11 The Grove Theatre, Dunstable: part of a mixed use leisure development.

8.04.03

Landscape considerations in rural and urban fringe areas:

A The contours, boundaries and degree of visibility of the site or parts of it, will be major considerations in the layout and form of the proposed development.

B The analysis of the landscape of the context and the site should establish the character of the proposals and suggest where existing hedgerows, lines of trees and single trees may be used to define boundaries and edges both at the fringe and within the site. If bunds are appropriate and are not an intrusive feature in the landscape context, they should be planted to reinforce the existing landscape character.

C It should be recognised that extensive areas of on and off site set-aside are likely to be required by the Council for landscape mitigation.

Fig 8.12 External louvres on a western elevation. These are effective at most times of the year, although low winter sun is a challenge for the design of any shading device.

D Careful landscape design should be used to ensure appropriate boundary enclosure, create shade for building elevations and parked vehicles, to oxygenate the air in parking areas, to screen and shelter spaces, to maintain and enhance biodiversity, and to ensure sustainable drainage.

E The colour and reflectance of buildings is a key consideration, especially the effect on long distance views. Schemes should aim to:

- Integrate with the landscape,
- Relate to sky colours, or
- Reduce the buildings bulk by expressing it's constituent parts

Fig 8.13 An iconic building providing a focus in a campus of large footprint buildings ofvarious forms, periods and styles. The large projecting full height colonnade and the extensive louvres on the flanking elevations help to protect the fully glazed elevations from glare and excessive solar gain. (Kings Norton Library, Cranfield University, Norman Foster & Partners)

8.5 Larger footprint buildings checklist:

In all locations (urban, rural and urban fringe) has the following been considered:

- ☐ Does the design facilitate active frontages and address the public realm?
- ☐ Do groups of buildings share and enclose external public spaces?
- ☐ Have opportunities for access by foot, cycle and public transport been addressed?
- ☐ Can all generated parking be accommodated on site?
- ☐ Have opportunities for sustainable construction, solar orientation and energy efficiency been maximised?
- ☐ Does the building(s) seek to maximise opportunities for natural light and ventilation?
- ☐ Have waste management storage and water management been considered?

In urban locations has the following been considered:

- ☐ Does the design consider the relationship to the urban context and surrounding street frontages?
- ☐ Have elevations been subdivided to reflect local architecture?
- ☐ Have alternatives to large flat roofs, such as low pitches and barrel vault, and opportunities for green roofs been considered?
- ☐ Is the highway design sufficient to accommodate access by all modes?
- ☐ Is access for customers or building users separate to delivery vehicles?

In rural and urban fringe locations has the following been considered:

- ☐ Has the context of the landscape and wider visibility been used to influence the layout and form?
- ☐ Has sufficient land been set aside both on and off site to mitigate against any landscape impacts and provide benefits for screening, shading and shelter, oxygenation of air and biodiversity?
- ☐ Has the building(s) been coloured to integrate with the landscape and reduce bulk?

Further guidance on landscaping, SUDS, green roofs and sustainable construction can be found in the Green Infrastructure, Climate Change Adaptation and Sustainable Buildings Supplement.