CHAPTER 5

5 BUILDING HEIGHTS

5.1 INTRODUCTION

Fundamental to conducting a tall buildings study is understanding the height of buildings across Derby, which is why this topic has been given its own chapter.

This chapter covers:

Existing Building Heights

Using LIDAR data, the existing building heights above ground across the city have been accurately mapped. This paints a clear picture of how building heights differ across the wider city and what buildings are notably higher than others.

Emerging Building Heights

The heights of major planning applications in the city that have been granted or are under consideration are presented here to indicate how the profile of building heights may change in the coming years.

Building Heights Above Ordnance Datum

This section presents the existing buildings' height above ordnance datum (AOD), which is the height of buildings taking into account their underlying topography. This demonstrates the impact of topography on the perception of a building's stature and outlines what areas may be more sensitive for tall buildings due to their raised topography.

Context Heights

Chapter 3 of this report defines the concept of Context Heights; the dominant, prevailing or defining building height of an area. This section maps the context heights in Derby and provides the foundation for the assessment of tall buildings.

Definition of Tall Buildings for Derby

The definition of tall buildings presented in Chapter 3 is adapted specifically to the Derby context and explained fully.

Existing and Emerging Tall Buildings

The existing and emerging tall buildings in the city are classified based on the definition of tall buildings for Derby.

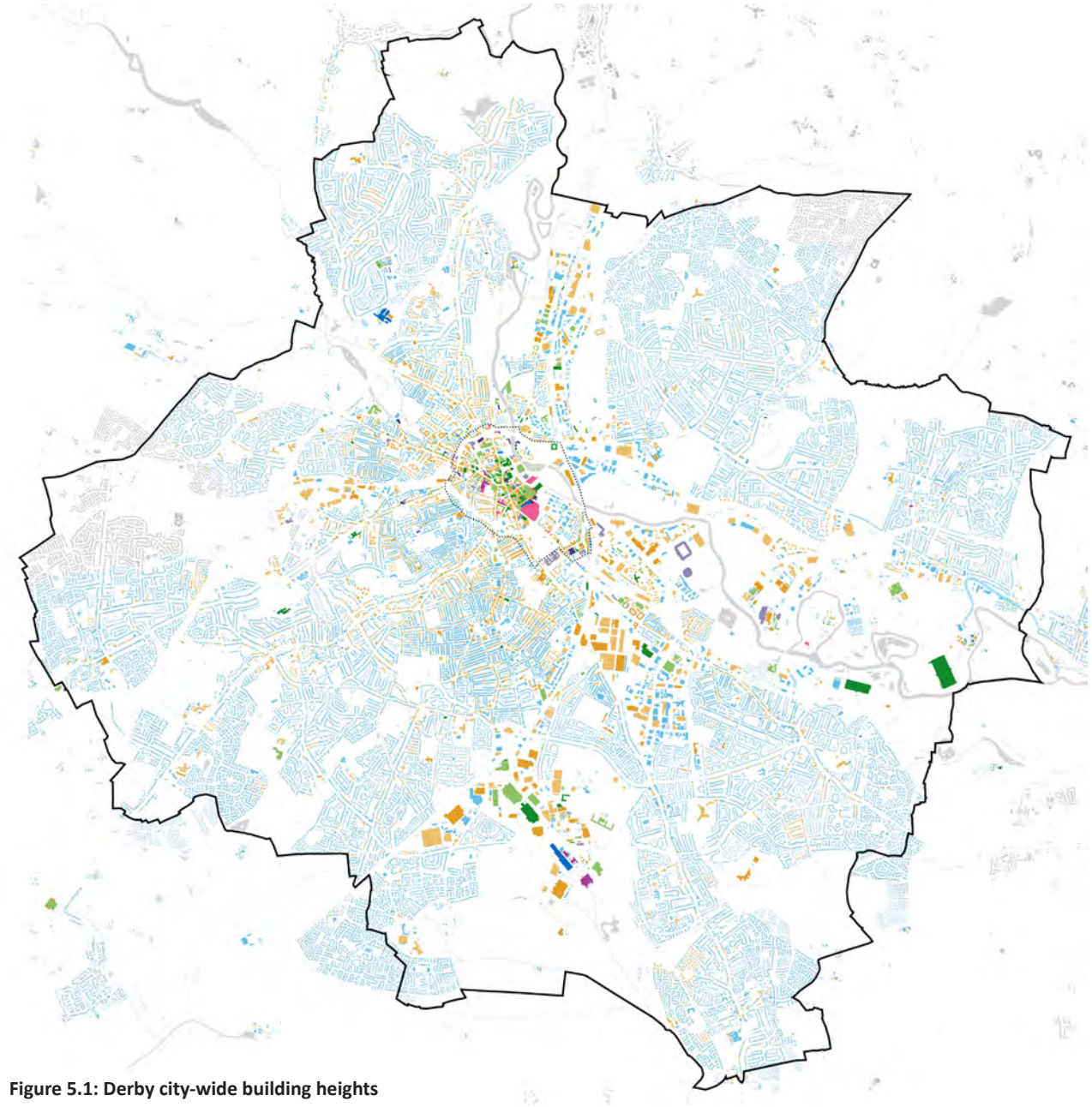

Figure 5.1: Derby city-wide building heights

5.2 EXISTING BUILDING HEIGHTS

Building heights across the study area have been identified using the most up to date LIDAR data available. LIDAR (Light Detection and Ranging) is a highly accurate method of surveying the earth's surface, and includes the following datasets:

- Digital Surface Model (DSM) - provides detailed information that includes buildings, trees and other small features.
- Digital Terrain Model (DTM) - provides a simplified view of the underlying topography, ignoring smaller features.

GIS software was used to effectively subtract the terrain (DTM) data from the surface (DSM) data of Derby, which reveals the height of buildings above ground level. The maximum height of a building was then attached to a building polygon (OS mapping) to provide a simple measure of height. This is presented in Figure 5.1 and Figure 5.2.

In order to make sense of the information, buildings have been categorised into ranges (for example, between 2 and 6 metres) and an indicative number of storeys is attached to each range for the benefit of the reader. This is based on a standard 3m storey height common in residential buildings. For instance, a 15m residential building would typically have 5 storeys. However, a 15m

industrial warehouse would certainly have a lower number of storeys. Thus, the number of storeys is simply an indication based on the accurate metre reading and should not be taken as a reliable guide.

Across the residential areas outside the CBD, buildings are predominantly 1-2 storeys in height. Buildings of 3 and 4 storeys, which have a stronger presence in areas like Friar Gate and Normanton Road, may indicate larger houses, institutional buildings such as schools and historic high streets. This low-lying context is occasionally punctuated by church towers such as St Luke's Church, and historic mills (e.g. Britannia Mill) above 20m. The industrial areas along the river and in the south of the city are generally higher than the surrounding residential buildings, ranging between 9m and 21m (equivalent to 3-6 storeys). Derby Arena and Pride Park Stadium stand above the surrounding buildings at 21-24m tall. This makes them highly visible as one approaches Derby from the south by rail. In the north, the University of Derby is distinctly tall at 39-48m.

Building heights increase generally in the city centre. Most buildings around the Market Place and Corn Market are 18-21m (5-6 storeys) in height. Buildings are lower at the edges of the city centre, being typically 9-15m (4-5 storeys) high. Taller buildings in the centre include INTU, Riverlights and St Mary's Church at 27-30m. Derby Cathedral is currently the tallest building in Derby at 65m above ground.

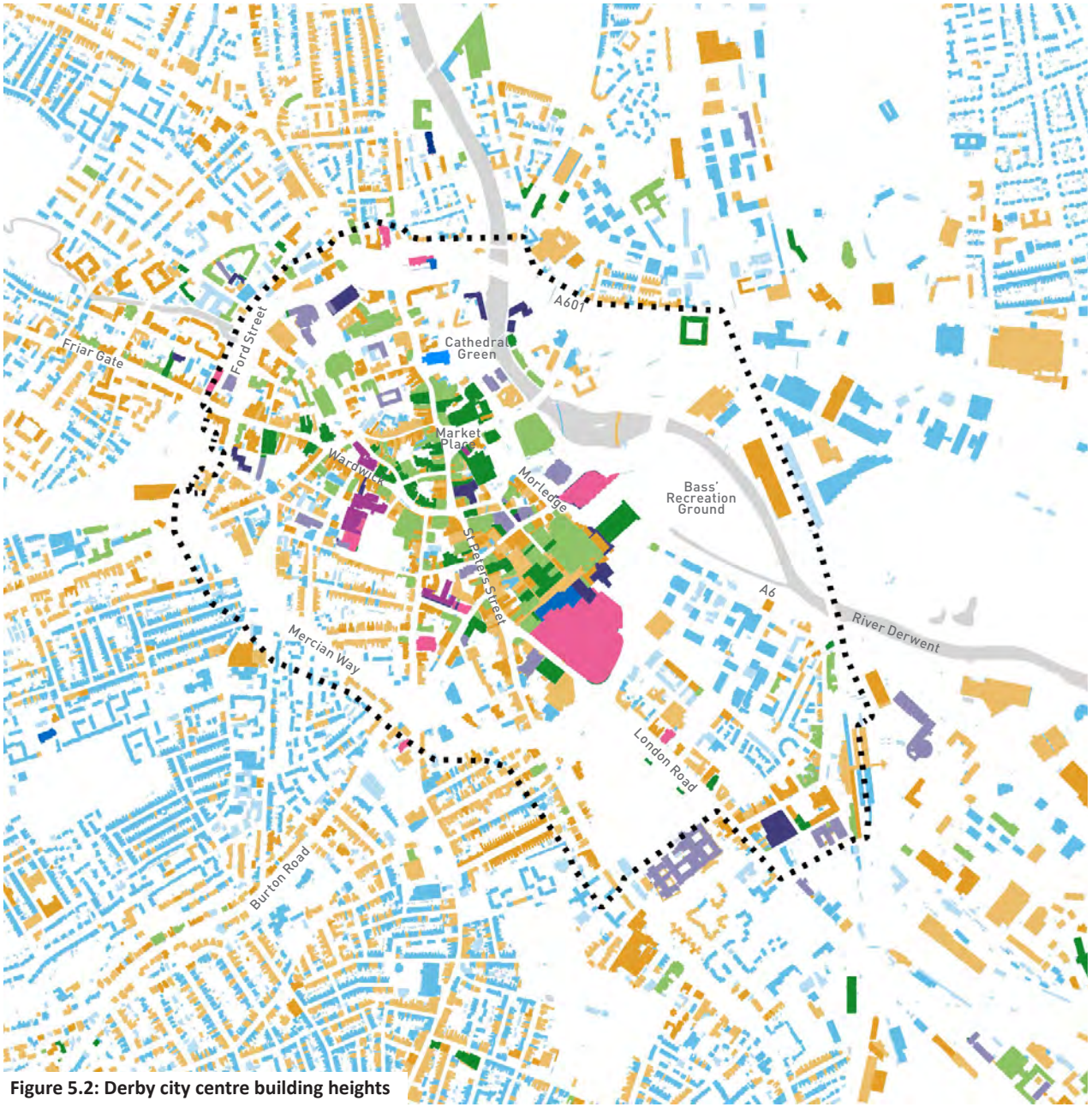

Figure 5.2: Derby city centre building heights

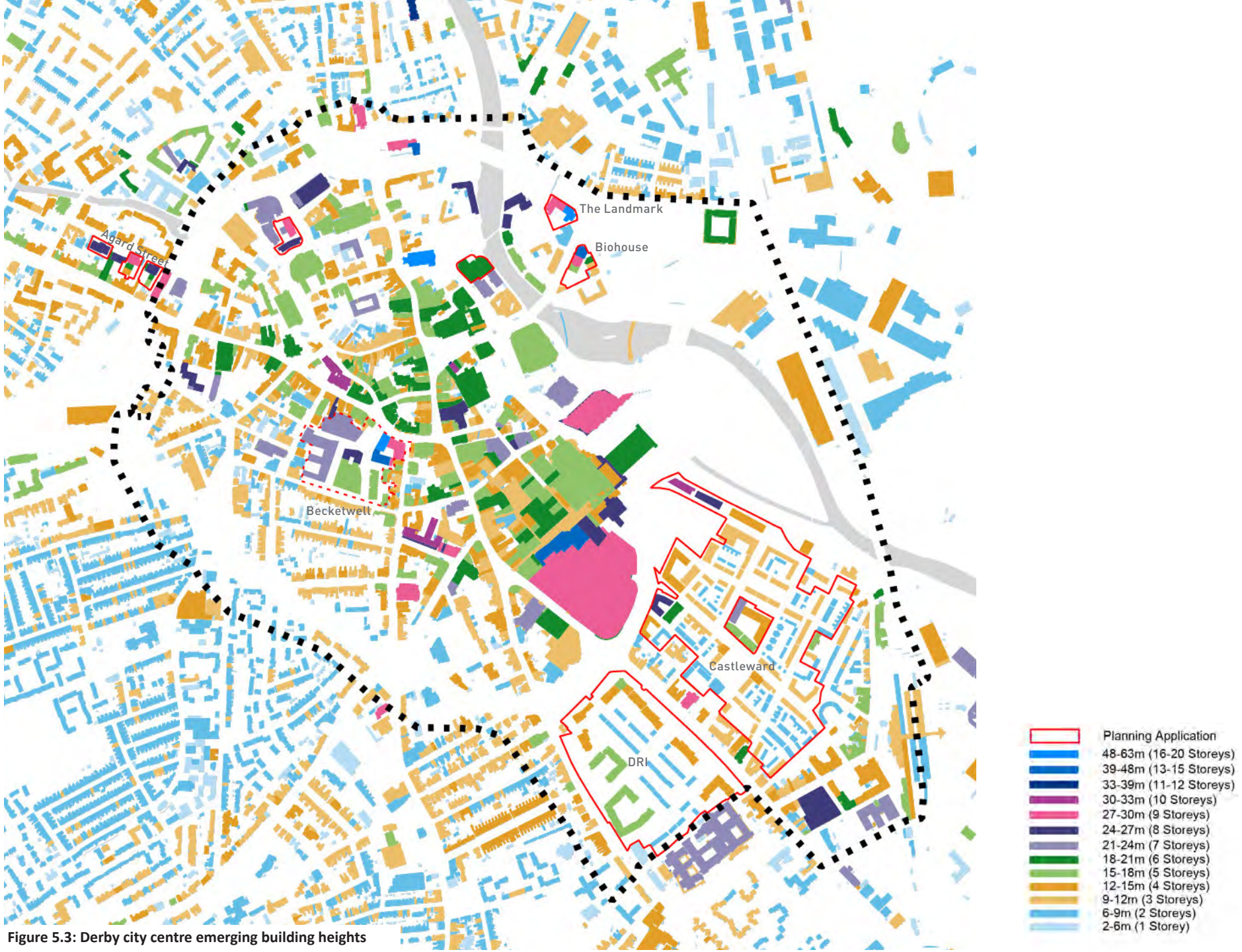

Figure 5.3: Derby city centre emerging building heights

5.3 EMERGING BUILDING HEIGHTS

Derby has seen a number of exciting proposals in recent years that would change the height characteristics of parts of the city. The largest of these areas is the Castleward regeneration area, which is partially completed. Adjoining is North Castleward, the area between the A6 and Castleward Boulevard, which is currently dominated by 1 and 2 storey industrial sheds. The outline permission for North Catleward would see a modest height increase to predominantly 3 storeys. The former Derbyshire Royal Infirmary (DRI) is currently undergoing redevelopment and will see a range of heights from 2 storeys at the centre to 4 and 5 storeys at the edges.

Outline consent has been granted for the regeneration of the Becketwell site, which would transform the character of this currently blighted part of the city. A comprehensive development would see buildings ranging from 2 storeys at the southern edge of the site, rising up to the 11 storey landmark building fronting Victoria Street. A performance venue at the eastern part of the site would be 10 storeys in height.

Student-related development is focused on Agard Street, with 3 planning applications coming forward to support the University of Derby. They propose buildings of 8-9 storeys fronting onto Agard Street, creating a strong enclosure on the narrow street.

On the northern Riverside, two substantial buildings are coming forward. Biohouse, which has been granted permission, would have a stepped form from 5 to 13 storeys along Derwent Street. The Landmark on Phoenix Street is under consideration and would rise to 17 storeys with a lower element of 9 storeys. Emerging tall buildings are discussed further in Section 5.7.

Figure 5.4: Illustration of proposed Castleward masterplan (Source: Compendium Living)

Figure 5.5: CGI visual of Becketwell proposal (Source: St James Securities)

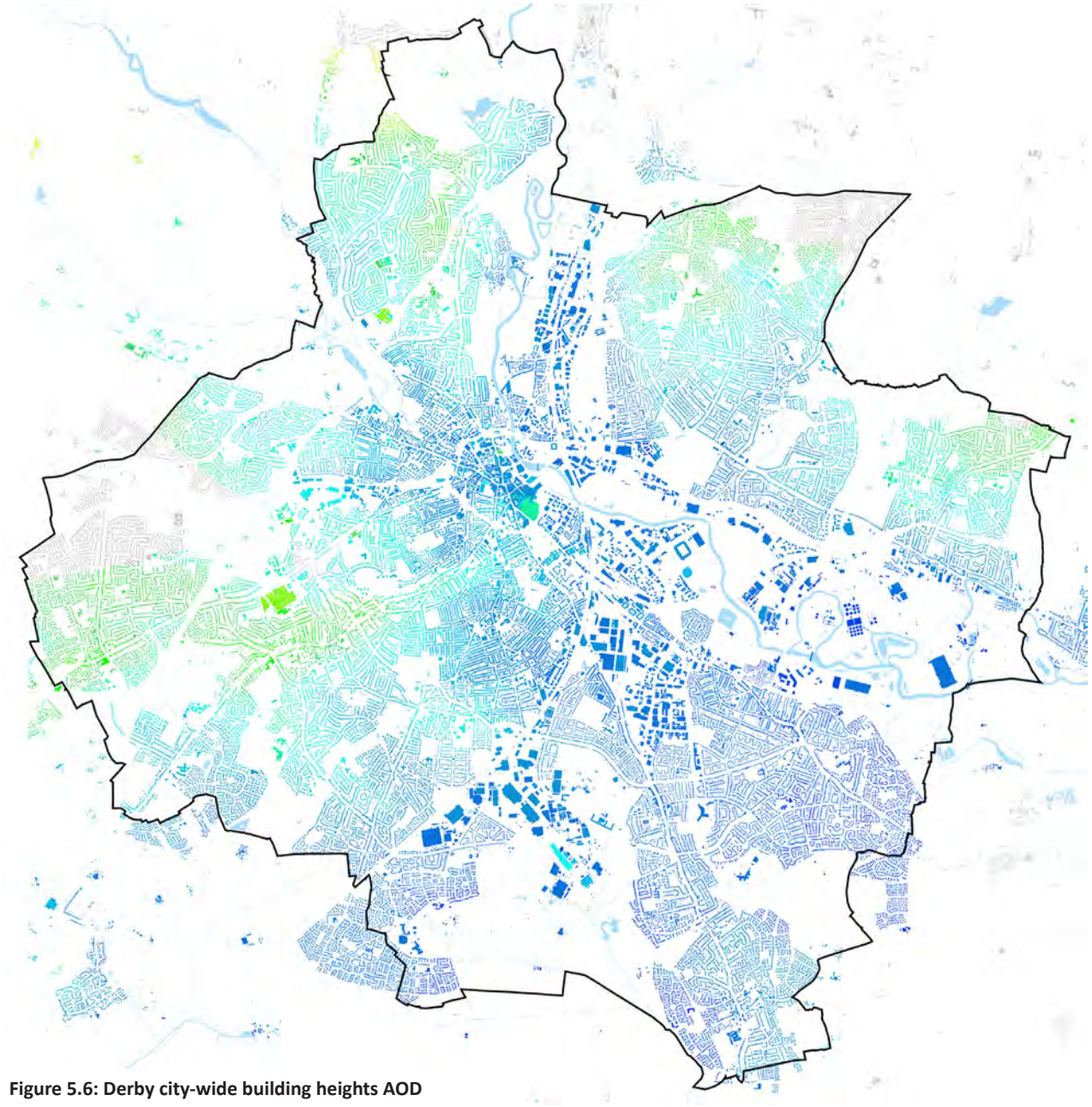

Figure 5.6: Derby city-wide building heights AOD

5.4 BUILDING HEIGHTS ABOVE ORDNANCE DATUM

Figure 5.6 and Figure 5.7 illustrate the height of buildings above ordnance datum (AOD). Height above ordnance datum (AOD) essentially means the height of an object or area above the standard mean sea level. This can be used to express the "true height" of a building taking into account the underlying topography. This is achieved by measuring the highest point of a building using the Digital Surface Model (DSM) LIDAR data set.

This is key to understanding the skyline of a place and how topography makes some buildings more prominent and others more hidden. It is important to measure the height of existing and proposed buildings above ordnance datum to understand the real impact of a building on the skyline and its relation to other buildings on varying topography.

The topography in Derby rises from the city centre to the north, east and west and so buildings in these higher locations are raised and appear more prominent in comparison to parts of the city at lower elevation. Figure 5.6 illustrates how the modest 1-2 storey buildings in Mickleover, Allestree and Oakwood are actually 120-150m AOD. In contrast, the city centre is at the bottom of the "bowl" of topography and so the 5-6 storey buildings here are typically 50-80m above ground.

In the context of the city centre, Derby Cathedral is the tallest building at 102m AOD. The INTU building sits on slightly higher ground and so reaches 93m AOD.

Understanding the height of tall buildings above ordnance datum is a key consideration in understanding their absolute heights in relation to other landmarks and determining the impact they will have on the city image, skyline and views, as well as local effects such as overshadowing and overlooking.

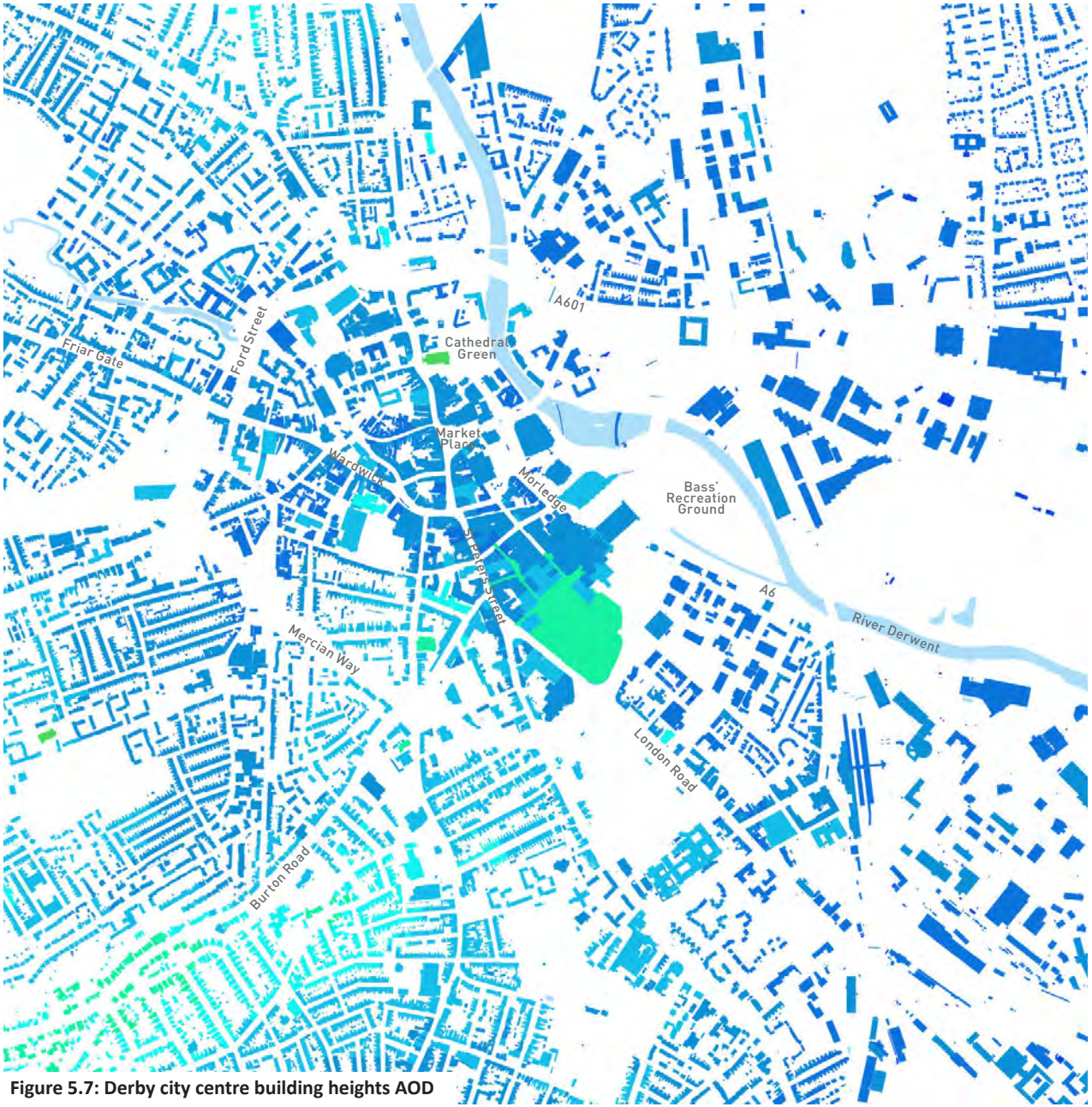

Figure 5.7: Derby city centre building heights AOD

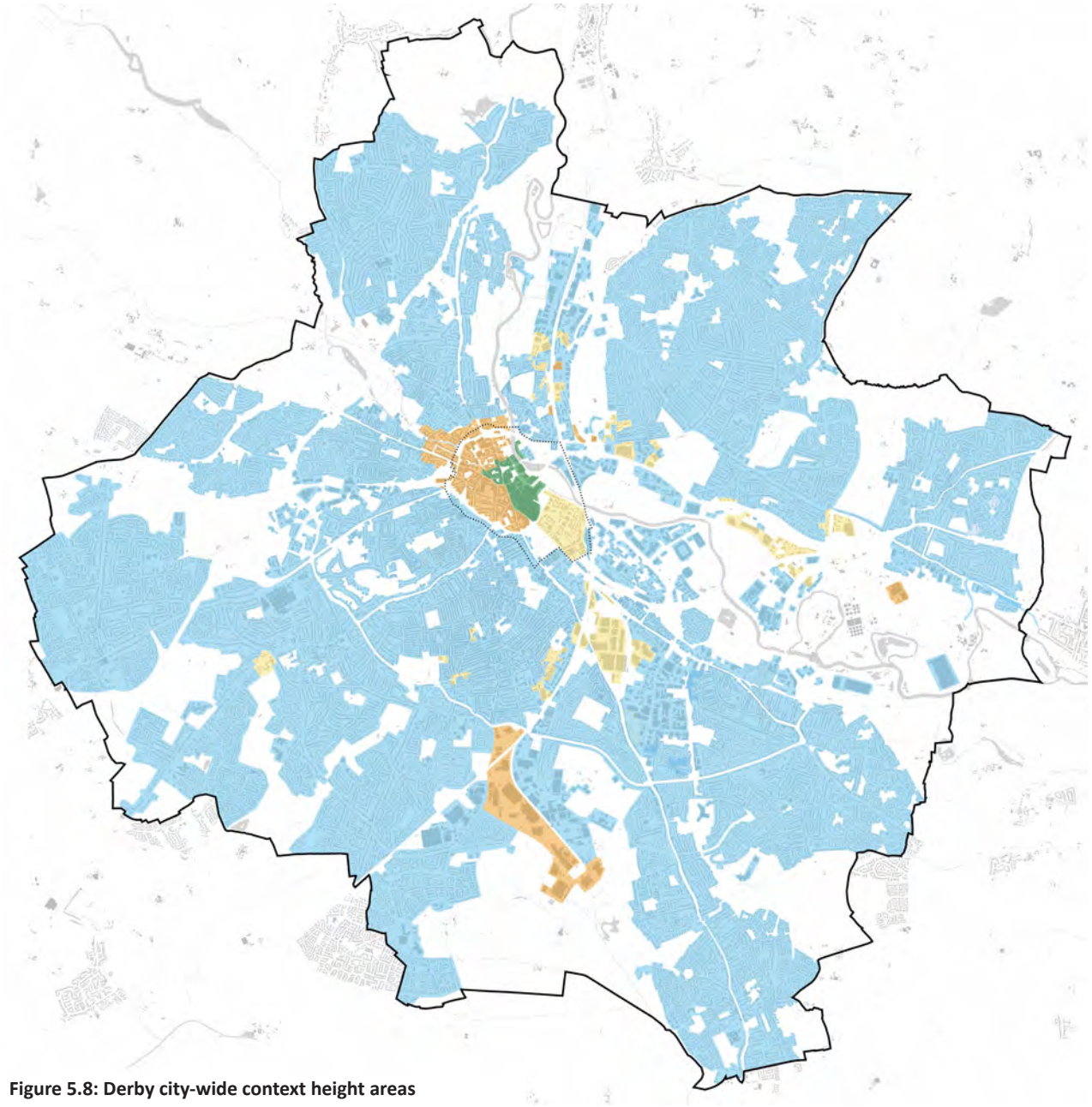

Figure 5.8: Derby city-wide context height areas

5.5 EXISTING CONTEXT HEIGHTS

As previously discussed, tall buildings are tall relative to their context. As such the context height is an important factor in defining a tall building and in determining whether or not its height is proportionate to its wider role and significance in the context of the city.

Building heights tend to vary between and within areas, and it requires urban design expertise to establish what is the relevant context height for a development to consider in a certain area. To assist in this process, this study provides detailed mapping of context heights across the city.

Proposals for tall buildings will be expected to refer to context heights in justifying the approach to the height of a tall building. Where more than one context height are is present around a site, at the interface between context height areas, or where a new general height is emerging, it is good practice to consider the proposals in the round and to establish an understanding of the prevailing height context from within which the development is going to be experienced.

Table 5.1 describes the four context height area types in Derby, which are illustrated in Figure 5.8 and Figure 5.9. The vast majority of the city is characterised as Area A, which is a context height of 2 storeys. Some pockets of industrial development create their own context heights that are slightly higher, such as Bombardier (Area B, 3 storeys) and the Rolls Royce campus (Area C, 4 storeys).

Within the CBD, heights increase from the surrounding context. Castleward steps up to a context height of 3 storeys. Most of the city centre within the inner ring road has a clear 4 storey context height (Area C). However, part of the city centre, from INTU up to the Assembly Rooms clearly displays a taller context height of 5 storeys (Area D).

Table 5.1: Context height categories

Code	Context Height	Range in Storeys	Area Description
A	**2 storeys** (6m)	1-3 (6 - 9m)	Domestic scale
B	**3 storeys** (9m)	2-4 (6 - 12m)	Local centres, large domestic scale, industrial
C	**4 storeys** (12m)	3-5 (9 - 15m)	Peripheral urban scale
D	**5 storeys** (15m)	3-8 (9 - 21m)	Intense urban scale

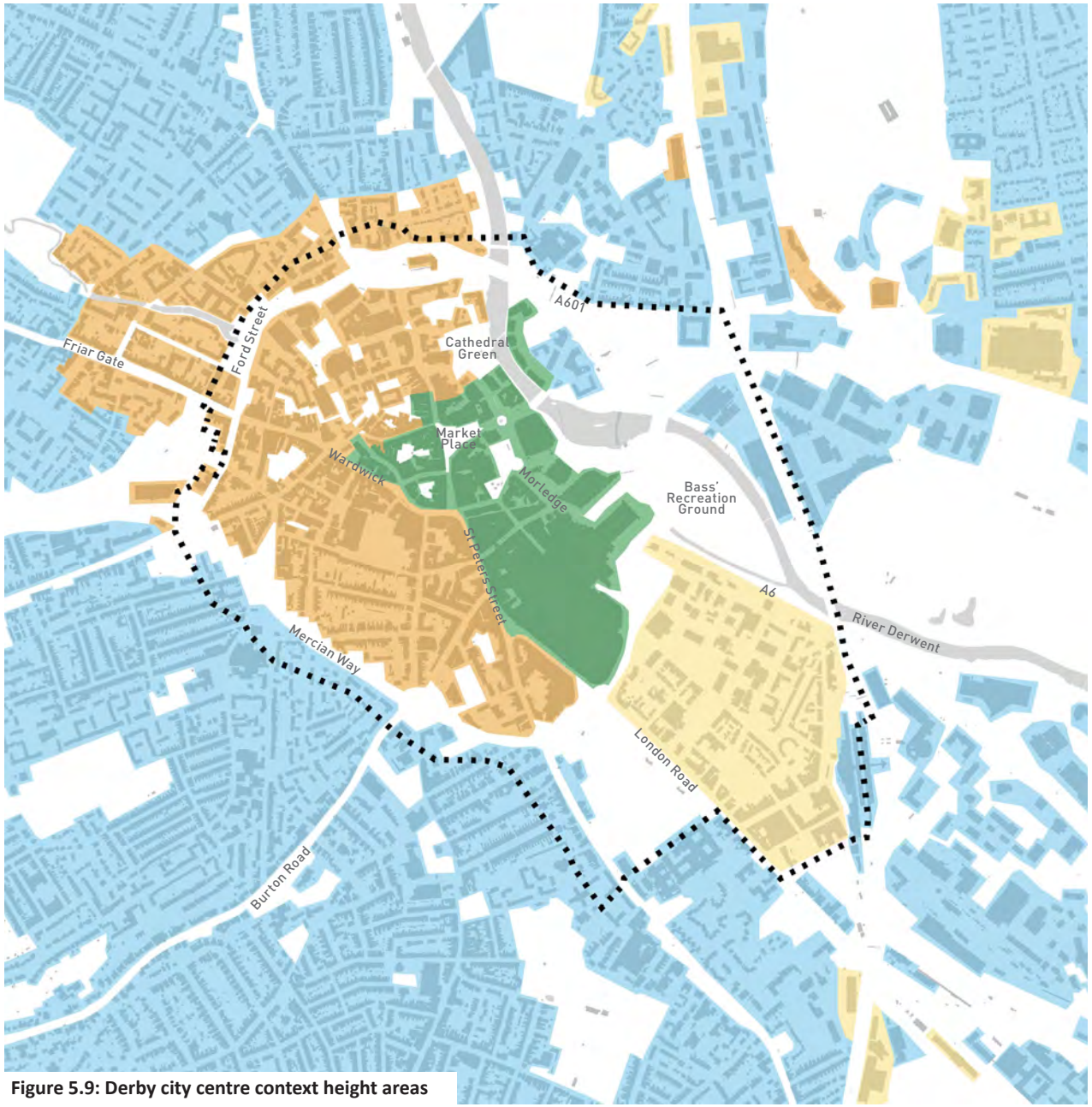

Figure 5.9: Derby city centre context height areas

5.6 DEFINITION OF TALL BUILDINGS FOR DERBY

The definition of tall buildings presented in this study (see Chapter 3) defines a tall building in relation to its context height. This theoretical approach has been adapted specifically to the Derby context and presented here.

Buildings that are less than twice (2x) the context height are not considered to be tall buildings, but merely "Large Buildings". Large buildings may still have a considerable impact on their local context but should be considered in respect of the authority's general design policies. A building that is twice the context height or above is considered a tall building. Within that broad definition are three categories:

- A **Local Landmark** tall building is defined as between 2x and 3x the context height. They are the most common type of tall building and have a localised level of significance and impact.
- A **District Landmark** tall building is defined as between 3x and 5x the context height. They are of a significant scale and have impacts over a wide area. For Derby city centre, the reference context heights for District Landmarks has been identified as 4 storeys, given the height characteristics of the city centre. Therefore, if a District Landmark is located in context height Area D (5 storeys), it will be considered against context height Area C (4 storeys) instead.
- A **Metropolitan Landmark** is defined as being over 5x the context height. Due to the relatively modest size of Derby city, it is considered that there is no justifiable opportunity for tall buildings of metropolitan scale and they are excluded from this study.

Table 5.2 provides detailed definitions of Large Buildings, Local Landmarks and District Landmarks relevant to the context height areas introduced in Section 5.5.

Table 5.2: Tall buildings definition for Derby

Context Height Area	Context Height	Large Building Less than 2x Context Height	Local Landmark 2-3x Context Height	District Landmark 3-5x Context Height
A	**6m** 2 storeys	Less than 12m Less than 4 storeys	12m - 18m 4 - 6 storeys	18m - 30m 6 - 10 storeys
B	**9m** 3 storeys	Less than 18m Less than 6 storeys	18m - 27m 6 - 9 storeys	27m - 45m 9 - 14 storeys
C	**12m** 4 storeys	Less than 24m Less than 8 storeys	24 - 36m 8 - 11 storeys	36m -60m 12 - 19 storeys
D	**15m** 5 storeys	Less than 30m Less than 10 storeys	32m - 48m 10 - 15 storeys	

5.7 EXISTING AND EMERGING TALL BUILDINGS

Based on the definition of tall buildings for Derby described in Section 5.6, the number of tall buildings across the city centre have been identified. There are likely other existing tall buildings located across the wider city that are not identified here. The scope of this assessment is limited to the Central Business District and immediate environs and so should not be considered exhaustive. There are currently 6 District Landmarks in and around the CBD:

- Rivermead House;
- Jurys Inn;
- Derby Cathedral;
- Intu shopping centre (the cinema box is the tallest element of the building);
- Assemblies of the First Born Church; and
- Saint Luke's Church.

There are 18 local landmarks, which include the Roundhouse in Pride Park and the Copper Box building on Agard Street.

There are a number of emerging tall buildings in Derby that have either been granted permission or are planning proposals awaiting decision. At the time of writing three tall buildings have been granted permission, although work has not yet begun on site.

These are:

- The Landmark, Phoenix Street (17 storeys) - District Landmark*;
- Biohouse, Derwent Street (13 storeys) - Local Landmark*; and
- 36 Agard Street (9 storeys) - Local Landmark.

Two further tall buildings have been granted outline consent by the planning authority:

- Becketwell redevelopment - Residential element (11 storeys, Local Landmark) and performance venue (10 storeys, Local Landmark);

*Note that the Biohouse and Landmark buildings are located in a context height of 2 storeys. However, the immediate area is highly incoherent, likely to change in coming years as new development comes forward, and adjoining a 5 storey context height area on the riverfront and city centre. Therefore, the real context height for the Biohouse is considered as 5 storeys, and The Landmark as 4 storeys, as this is the city's reference context height for District Landmarks.

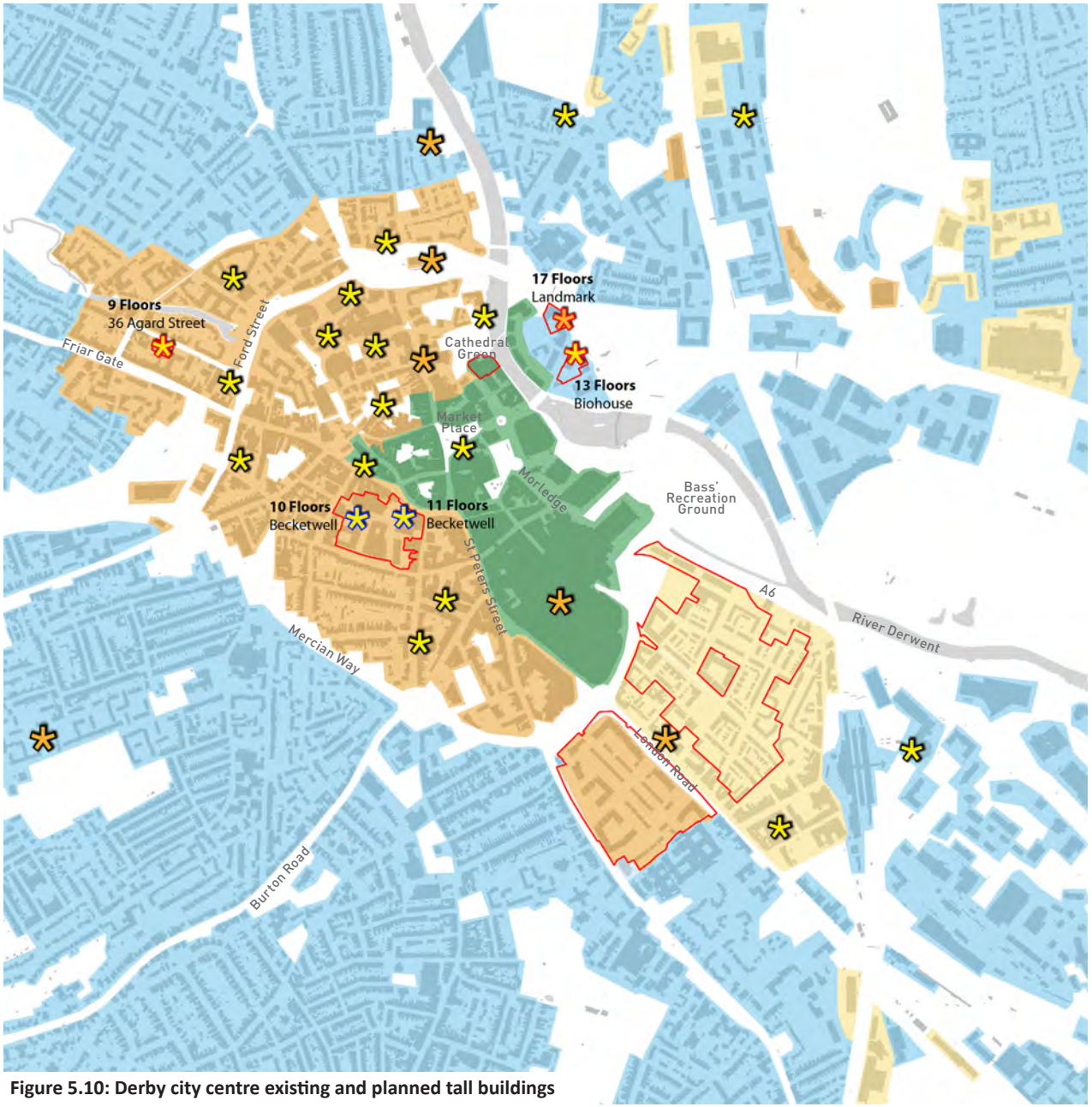

Figure 5.10: Derby city centre existing and planned tall buildings