Chapter 8

Technical

8.1. Introduction

The technical investigation and the resolution thereof, is the focus of this chapter. Principles guiding the details are discussed, after which each phase of the project is dealt with separately. Initial ideas are examined and then the final products and components are looked at. The chapter includes the technical documentation of all designed elements. (See Appendix C for an SBAT analysis of the MINI Space Gallery).

8.2. Technical principles for both phases

The underlying principle for all the connections of both phases is that no elements should touch. This is derived from:

- the theory, in which the elements of

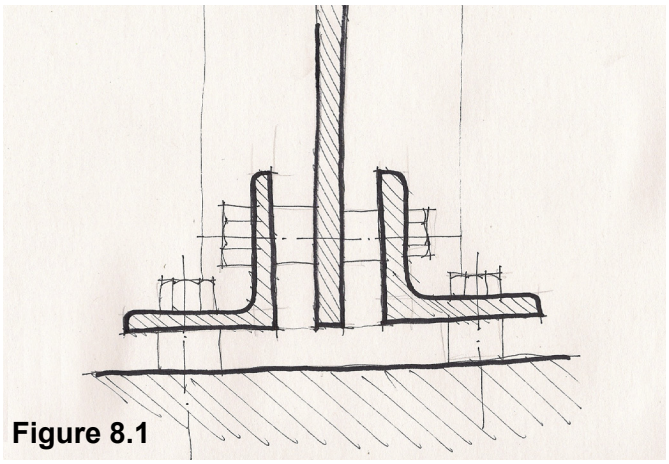


Figure 8.1

Fig.8.1 - Detail sketch of the connection between steel components and the existing structure for the Site Development.
Fig.8.2 - Detail section of the MINI Shop's display units (not to scale).
Fig.8.3 - Parti-diagram of the Site Development compared with the top of a ventilation shaft.
Fig.8.4 - Perspective detail of the glass panels of the MINI Space Gallery and ancillary spaces.

architecture and consequently the project, are deconstructed, so that each part is still individually identifiable in the final product (fig.8.1);

- the precedents, where: Piano separated the stereotomic from the tectonic; Coop Himmelb(l)au created dynamic forms contrasting with the old; Fuksas separated old and new (fig.8.2).
- both parti-diagrams, where the form/beauty, function/programme and tectonics/structure are each created separately before being overlaid to create space (fig.8.3).

This single principle not only reinforces the theory behind the design, but also allows the existing structure to be acknowledged, because new elements are always distinct from it (fig.8.4).

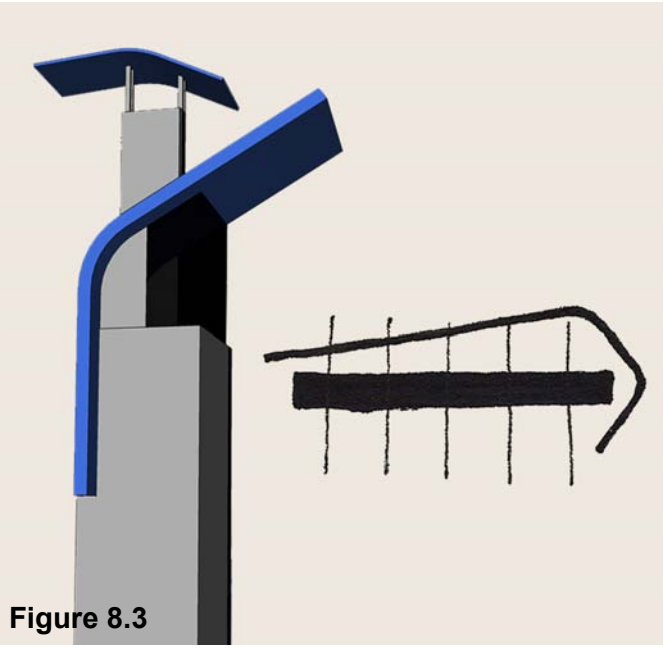


Figure 8.3

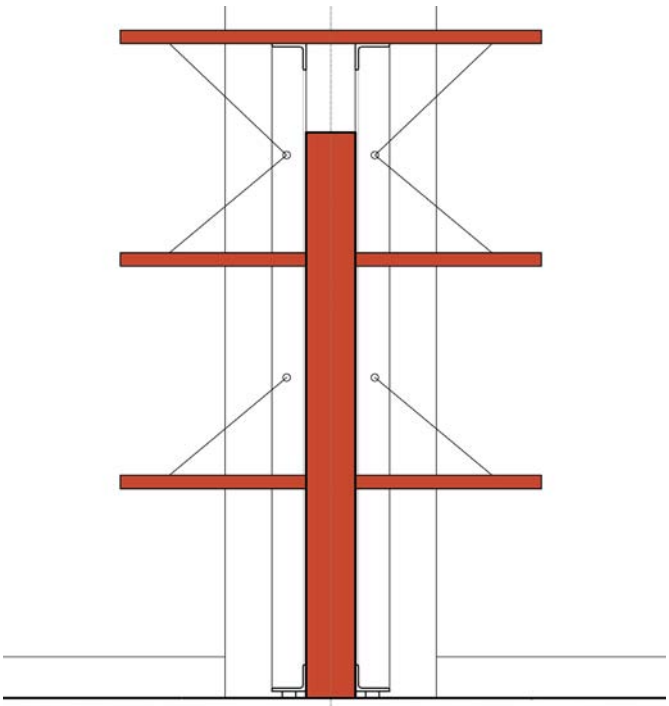


Figure 8.2

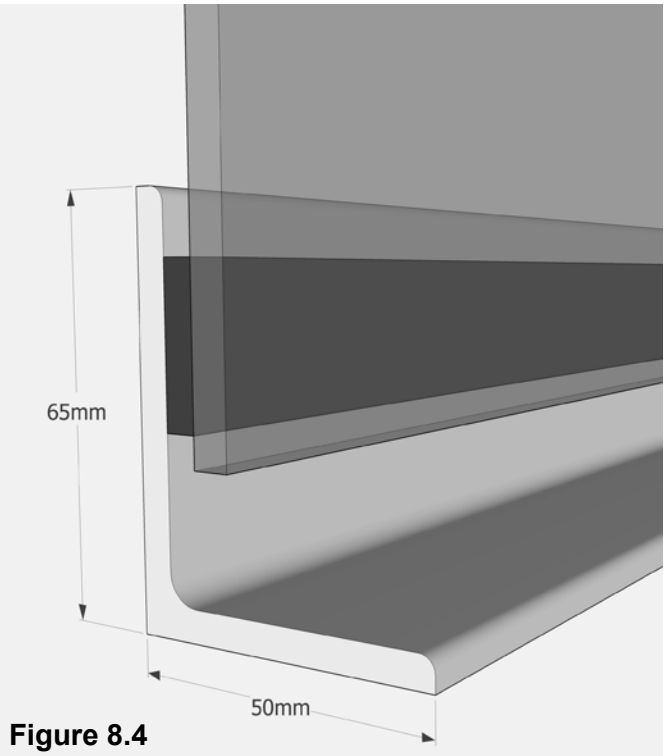


Figure 8.4

Fig.8.5 - Elevation of the Site Development, with x,y and z components highlighted in different colours (not to scale).

Fig.8.6 - Plan of the site layouts of the Site Development, with x,y and z highlighted in different colours (not to scale).

Fig.8.7 - Simplified perspective detail of the steel-to-steel connections for the Site Development.

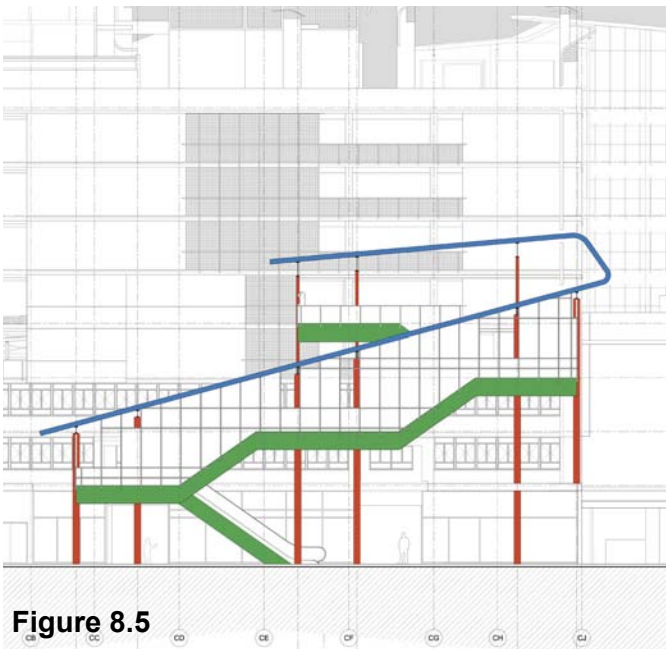


Figure 8.5

8.3. First phase: the Site Development

All plans, elevations, sections and details for this phase of the project are shown in figs.8.8-8.52.

In each detail, whether in section, elevation or plan, the parti-diagram is still perceptible. In some instances this is visually identifiable (fig.8.5), yet in others, it is more theoretical (fig.8.6).

Structural sizes are all based on calculations done according to Orton (1988:22-54; see Appendix B) and were verified by von Geiso (2009).

Standard details were developed that could be repeated throughout this phase of the project. These include steel-to-concrete connections (figs.8.1 and 8.49), steel-to-steel connections (figs.8.7 and 8.50), roof-to-structure details (fig.8.48) and balustrade details (fig.8.53). Further details were designed for specific applications.

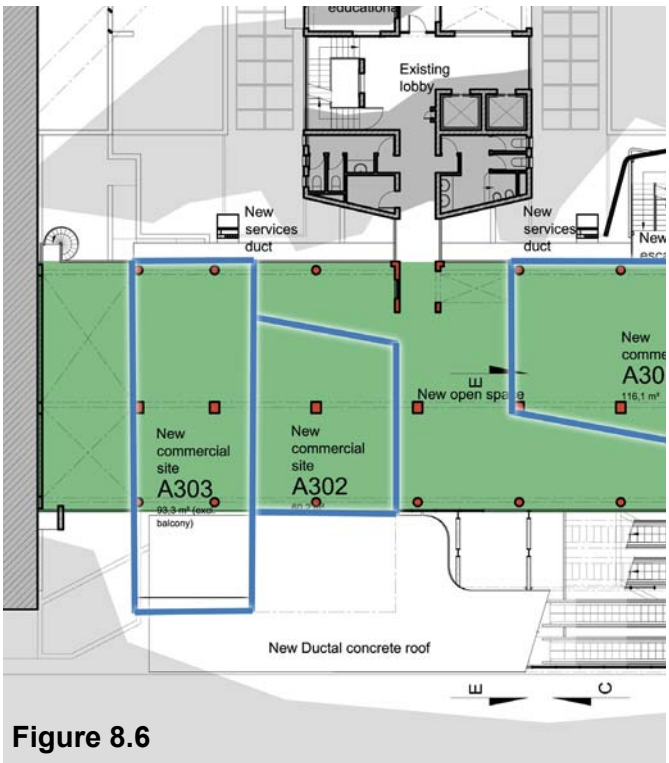


Figure 8.6

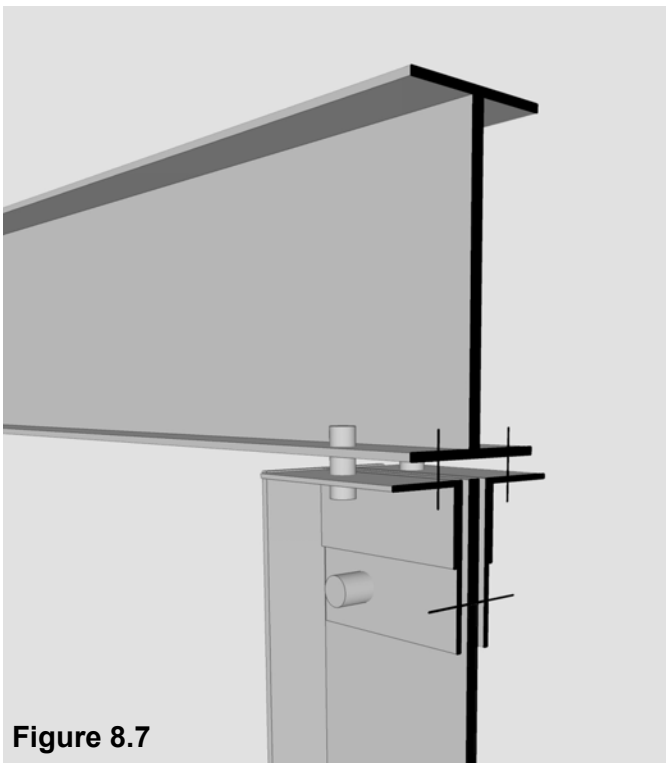
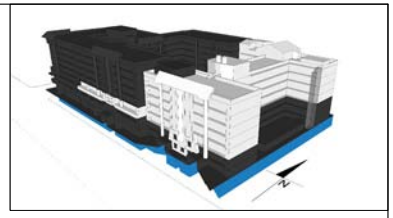
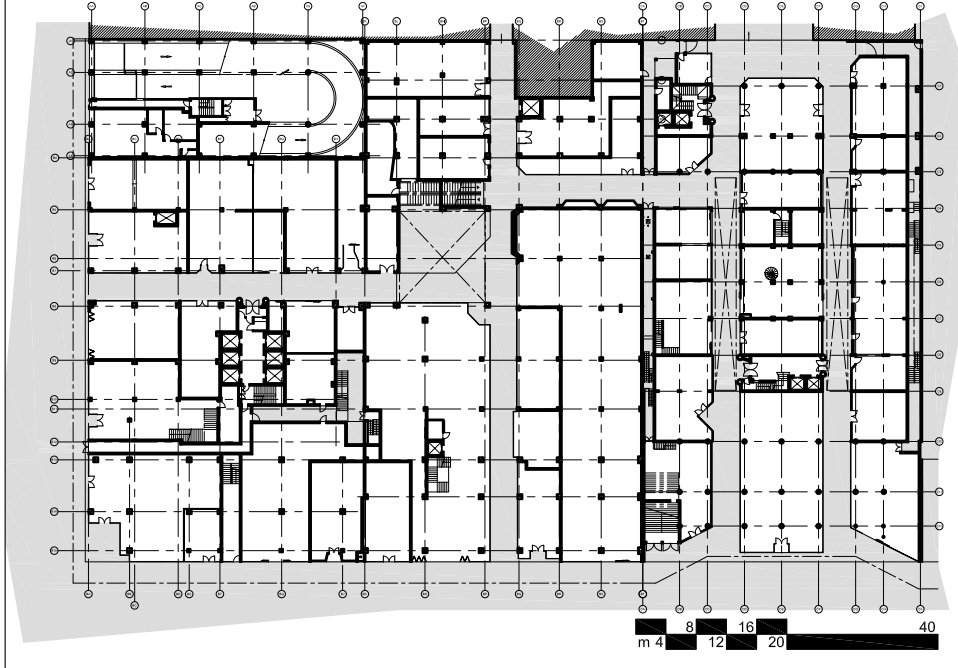


Figure 8.7



Perspective legend

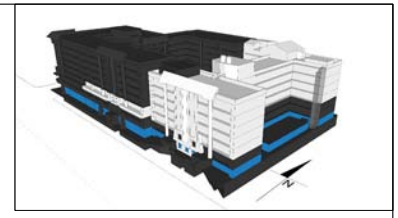


Existing

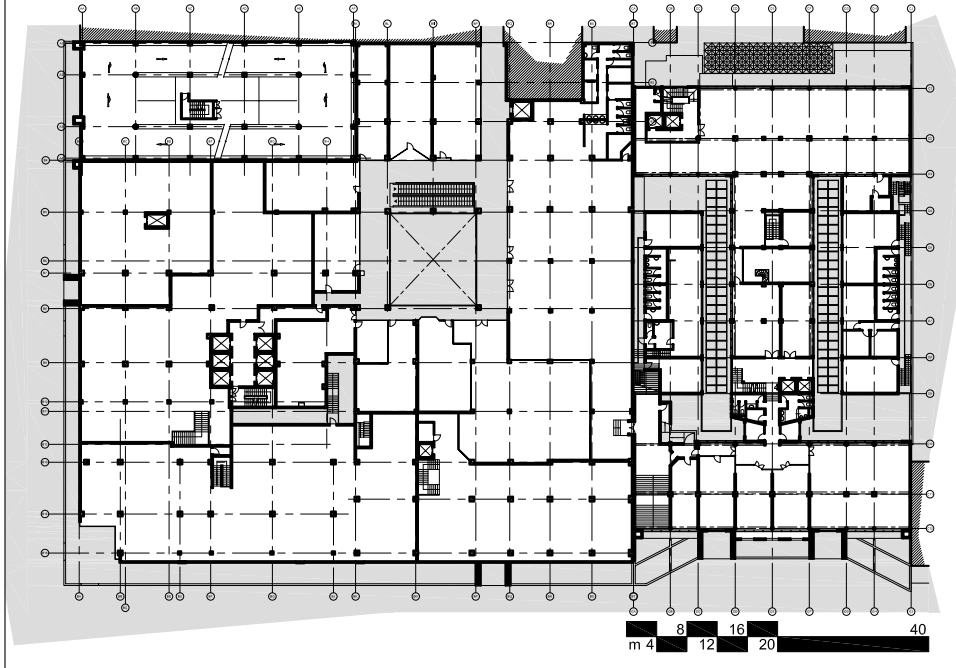
Ground floor plan

Scale as shown

Figure 8.9



Perspective legend

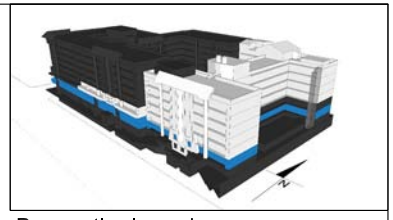


Existing

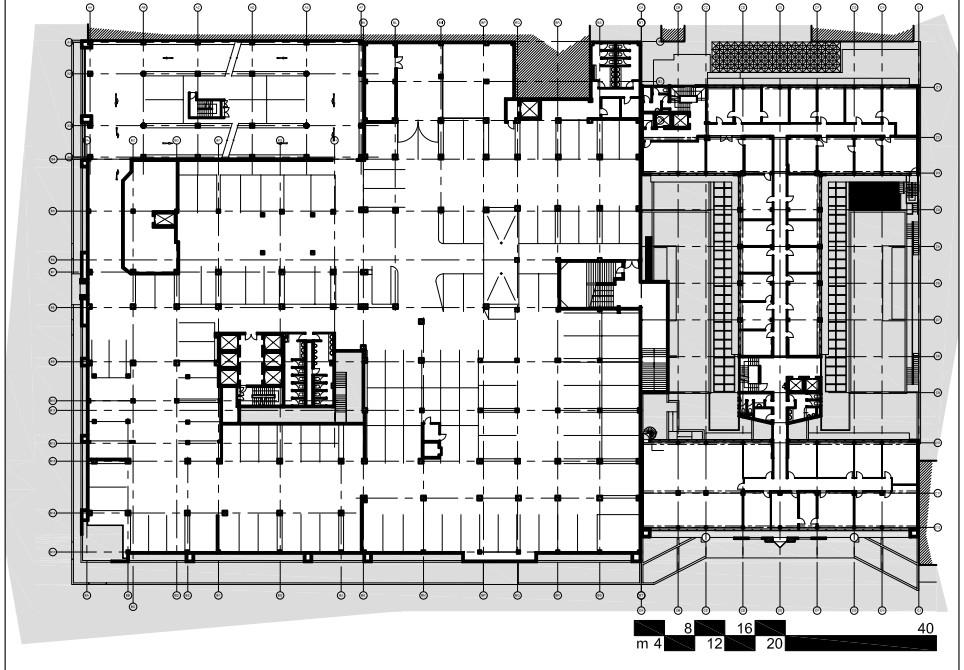
First floor plan

Scale as shown

Figure 8.8



Perspective legend

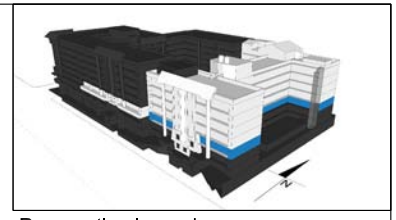


Existing

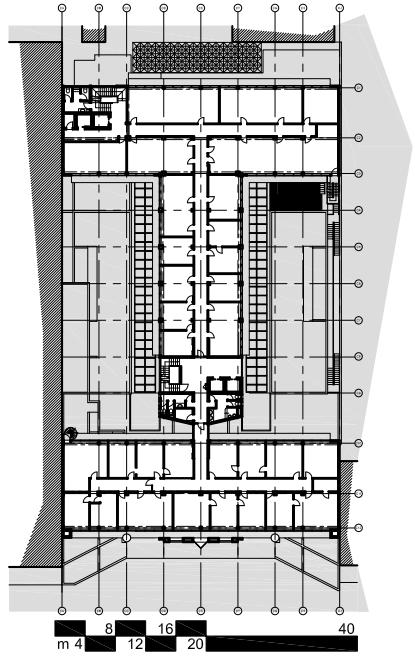
Second floor plan

Scale as shown

Figure 8.11



Perspective legend

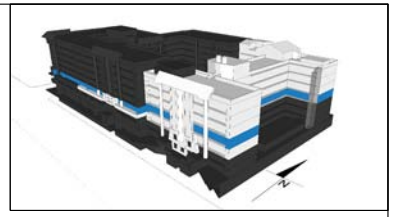


Existing

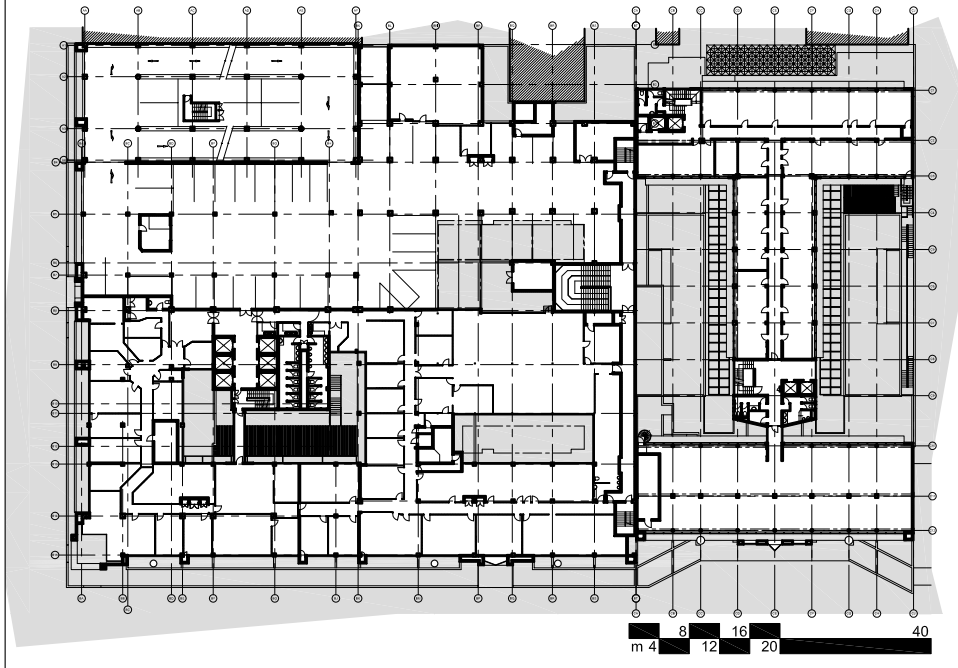
Third (City Centre) floor plan

Scale as shown

Figure 8.10



Perspective legend

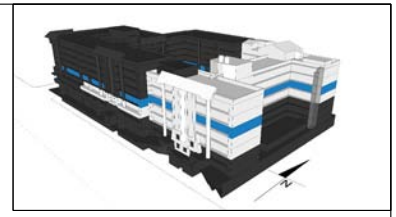


Existing

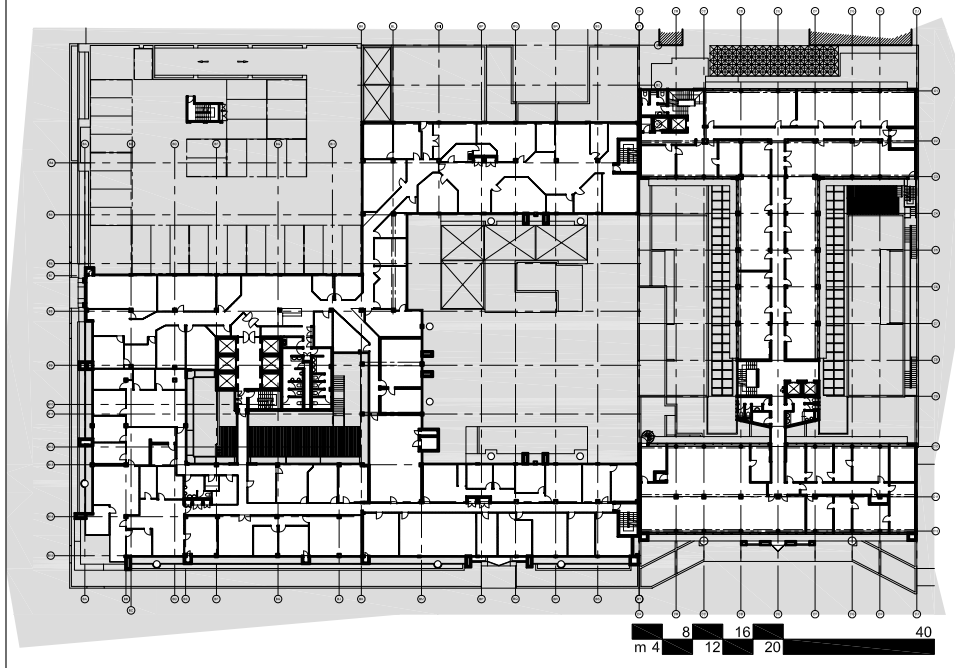
Third (Die Meent) / fourth (City Centre) floor plan

Scale as shown

Figure 8.13



Perspective legend

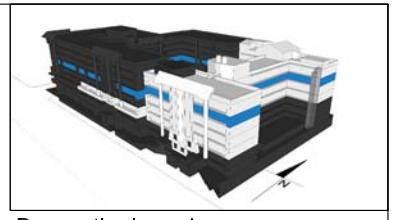


Existing

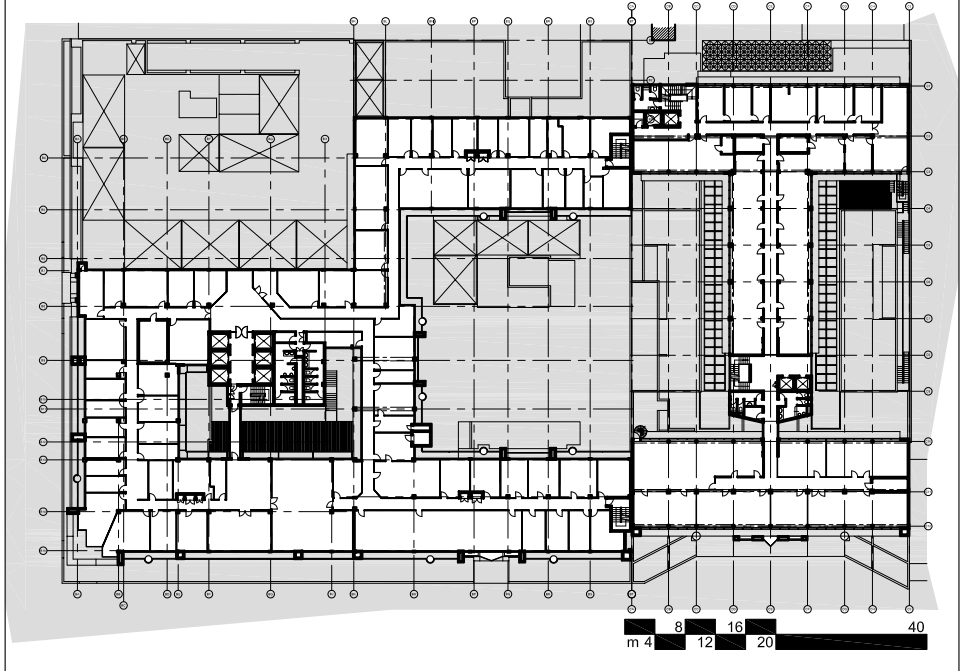
Fourth (Die Meent) / fifth (City Centre) floor plan

Scale as shown

Figure 8.12



Perspective legend

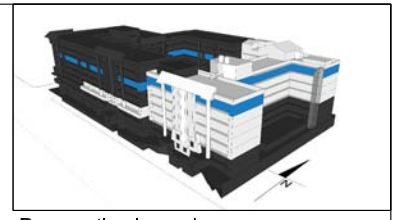


Existing

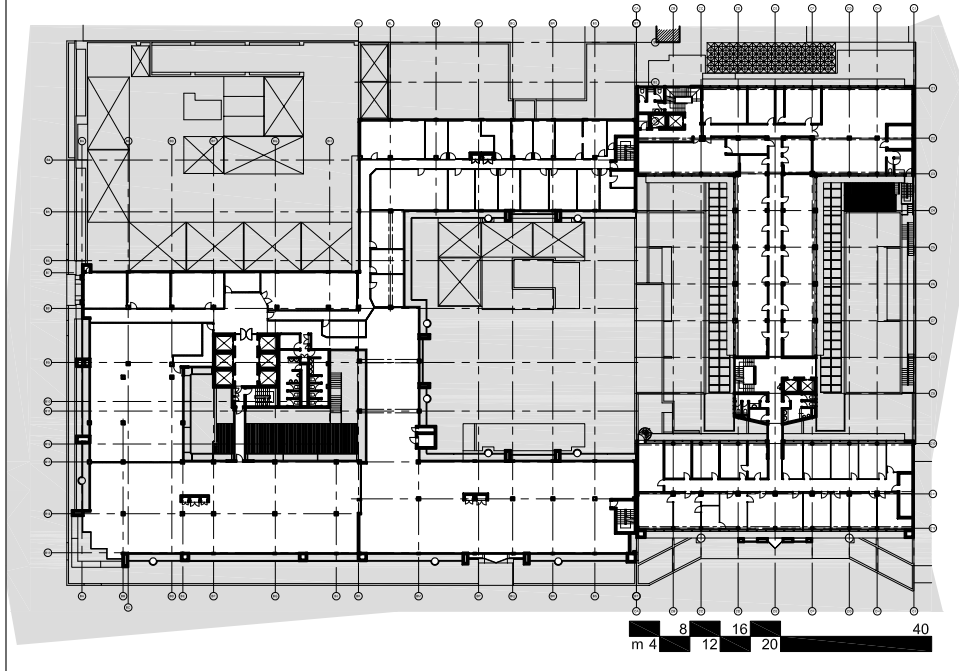
Fifth (Die Meent) / sixth (City Centre) floor plan

Scale as shown

Figure 8.15



Perspective legend

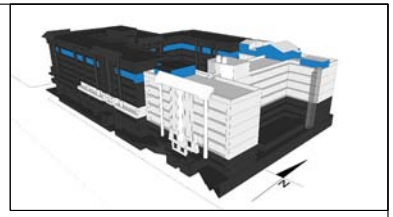


Existing

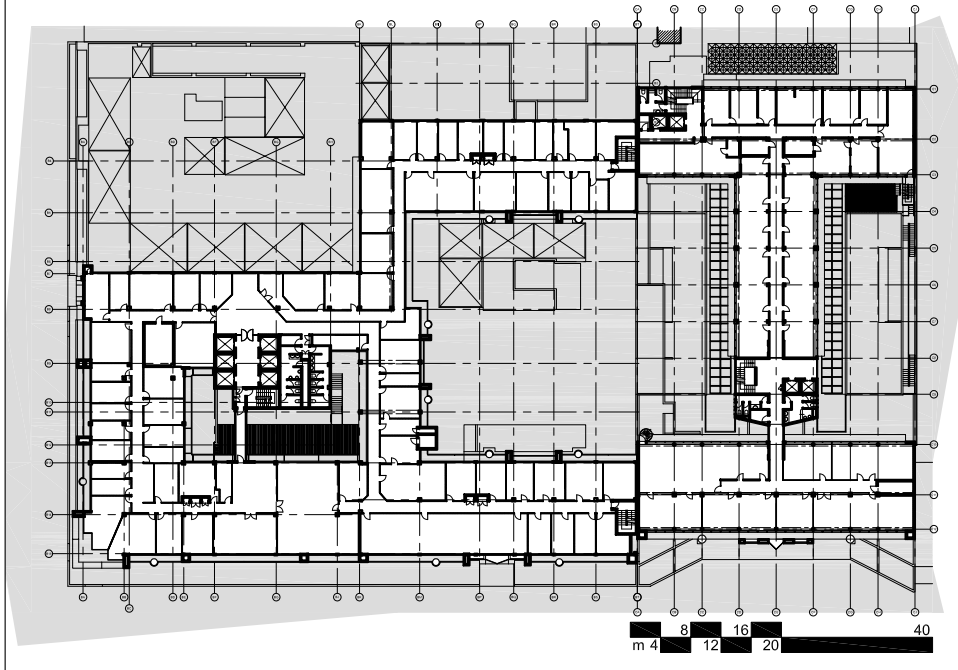
Sixth (Die Meent) / seventh (City Centre) floor plan

Scale as shown

Figure 8.14



Perspective legend

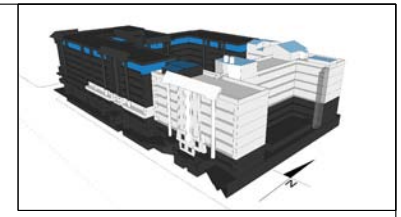


Existing

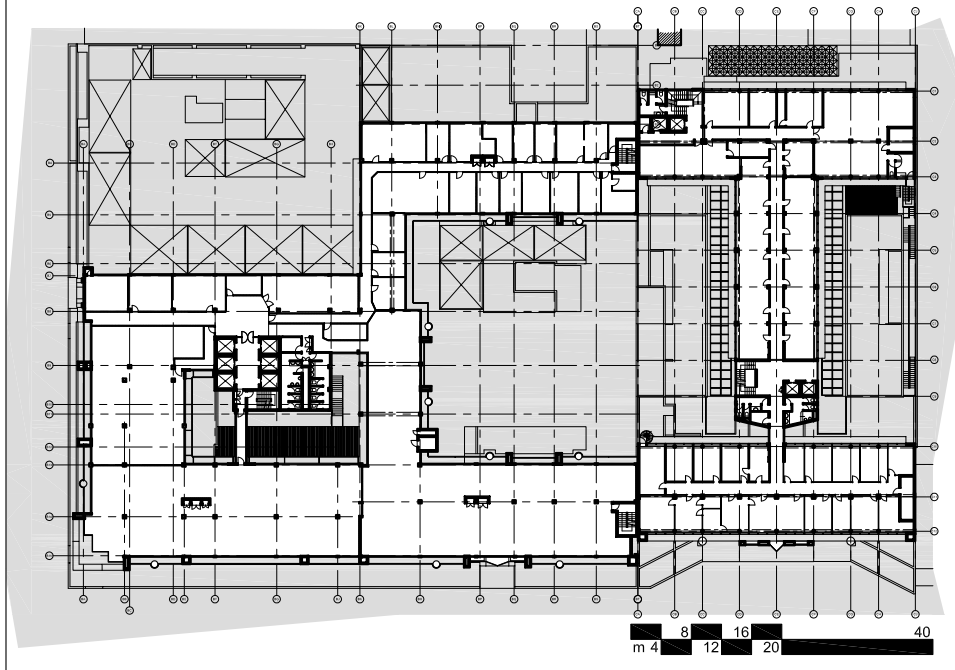
Seventh (Die Meent) / eighth (City Centre) floor plan

Scale as shown

Figure 8.17



Perspective legend

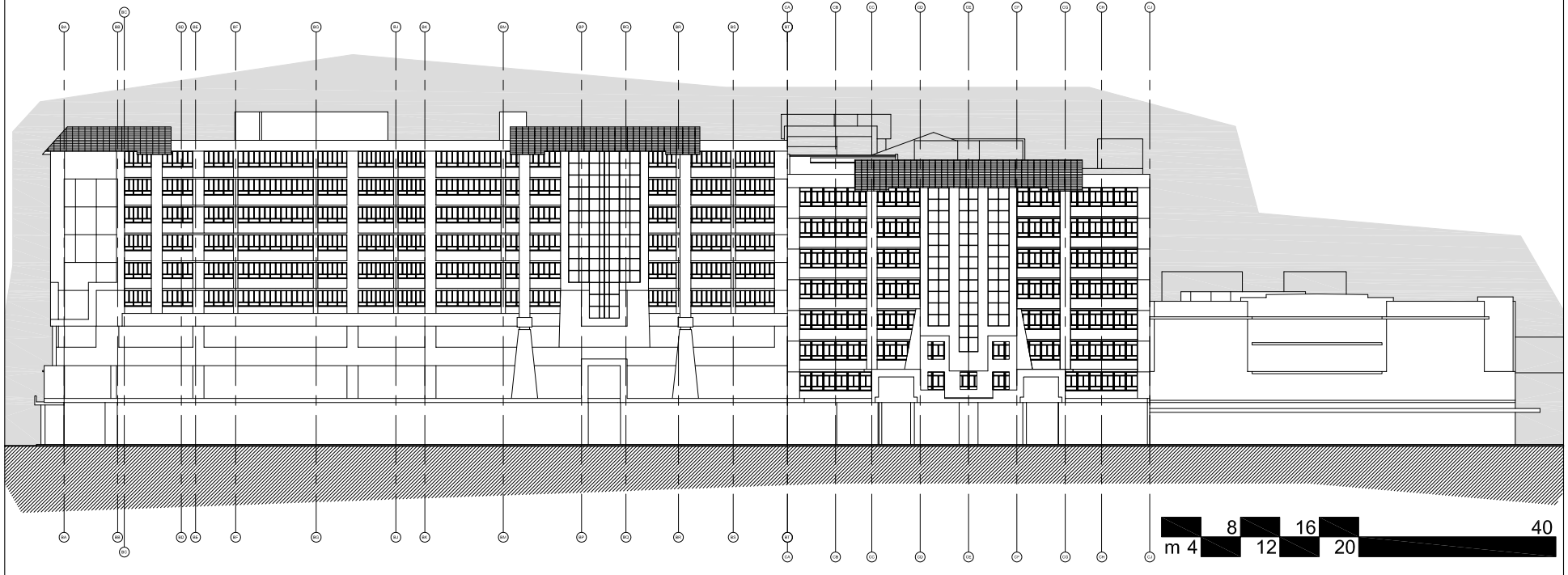


Existing

Eighth floor (Die Meent) / roof (City Centre) plan

Scale as shown

Figure 8.16

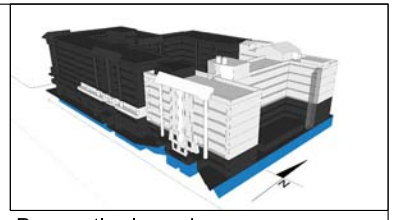


Existing

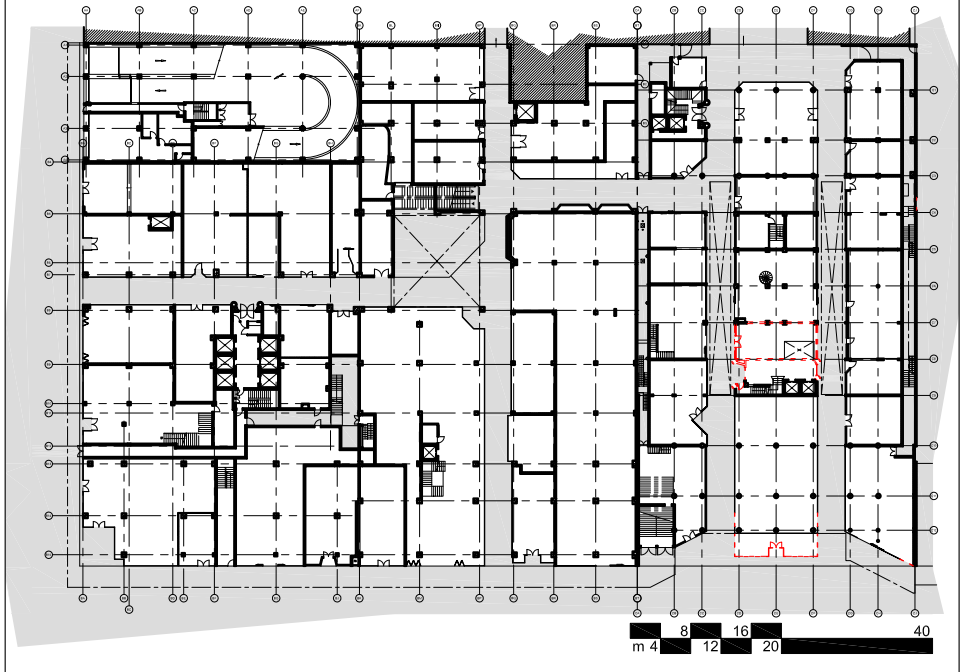
South elevation (Pretorius Street)

Scale as shown

Figure 8.18



Perspective legend

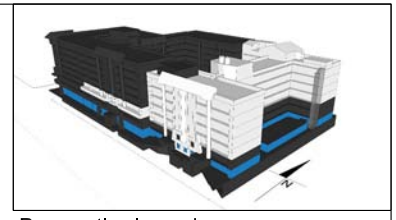


Demolitions

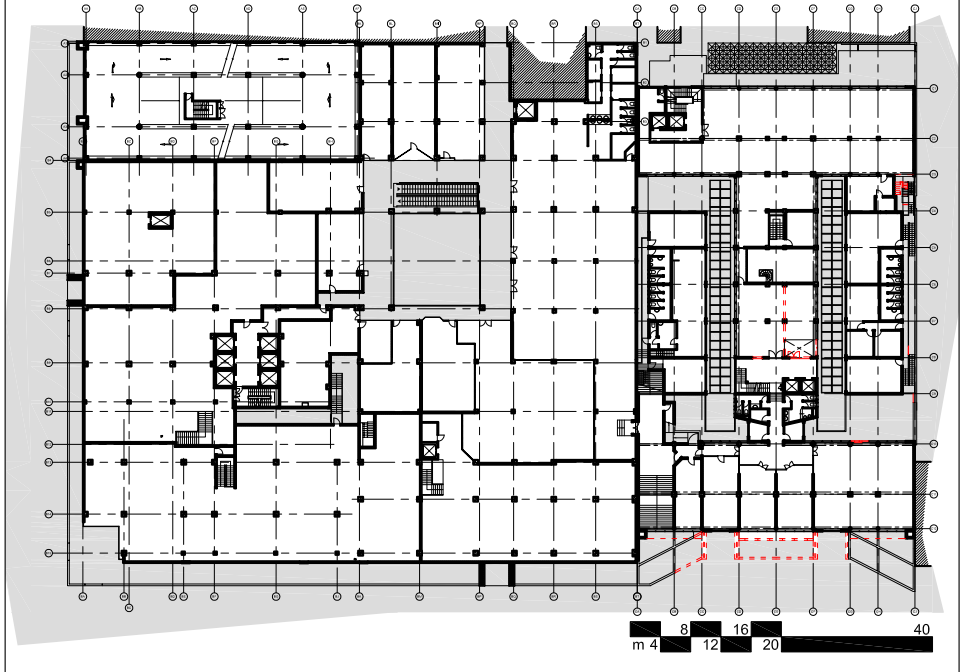
Ground floor plan

Scale as shown

Figure 8.20



Perspective legend

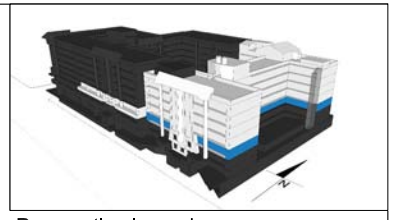


Demolitions

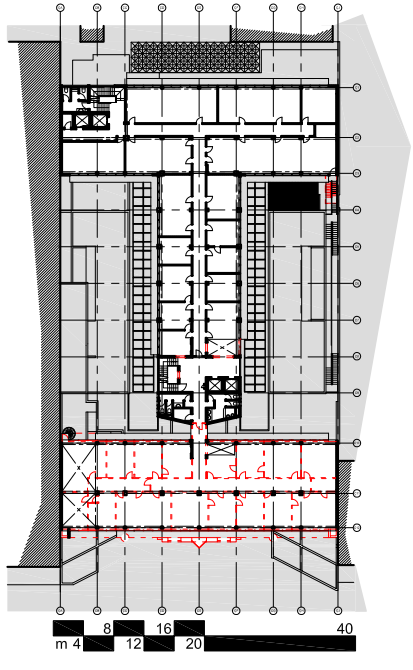
First floor plan

Scale as shown

Figure 8.19



Perspective legend

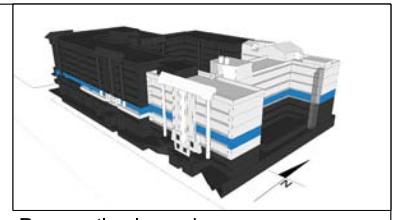


Demolitions

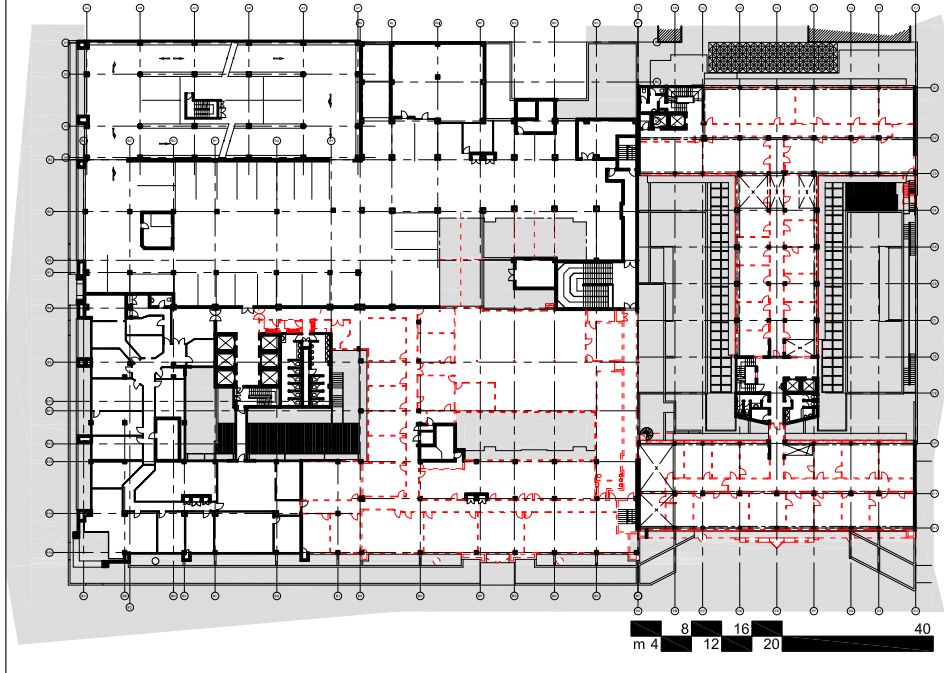
Third (City Centre) floor plan

Scale as shown

Figure 8.22



Perspective legend

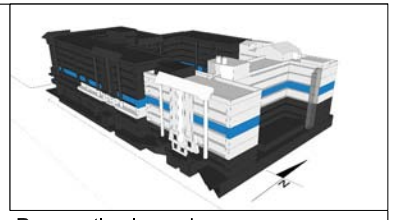


Demolitions

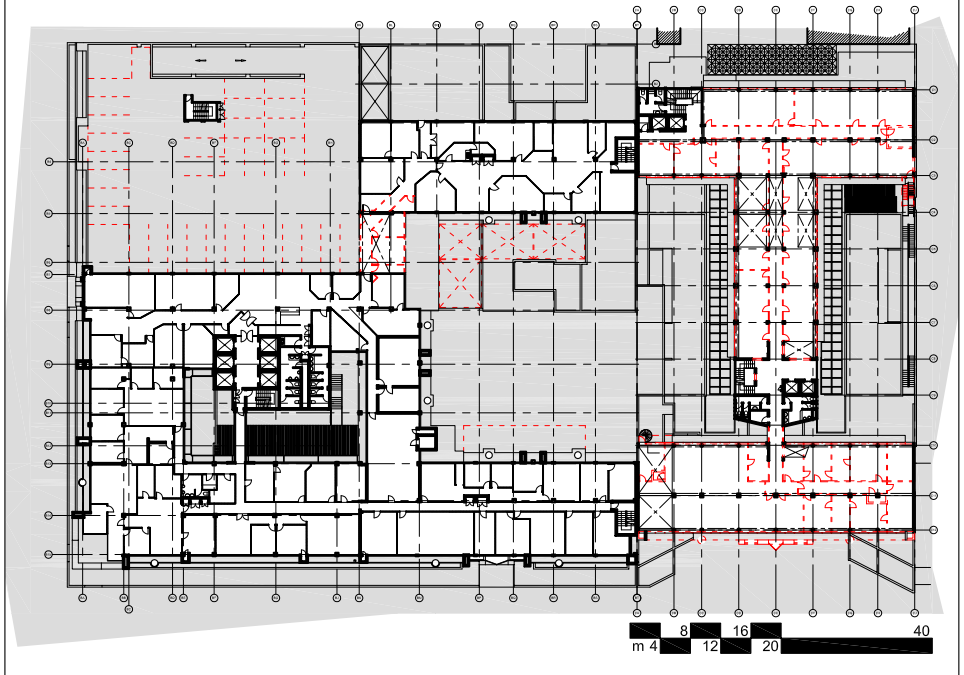
Third (Die Meent) / fourth (City Centre) floor plan

Scale as shown

Figure 8.21



Perspective legend

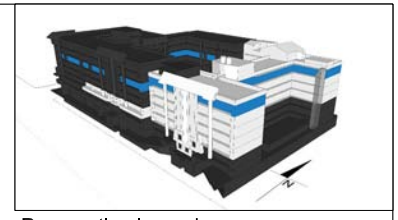


Demolitions

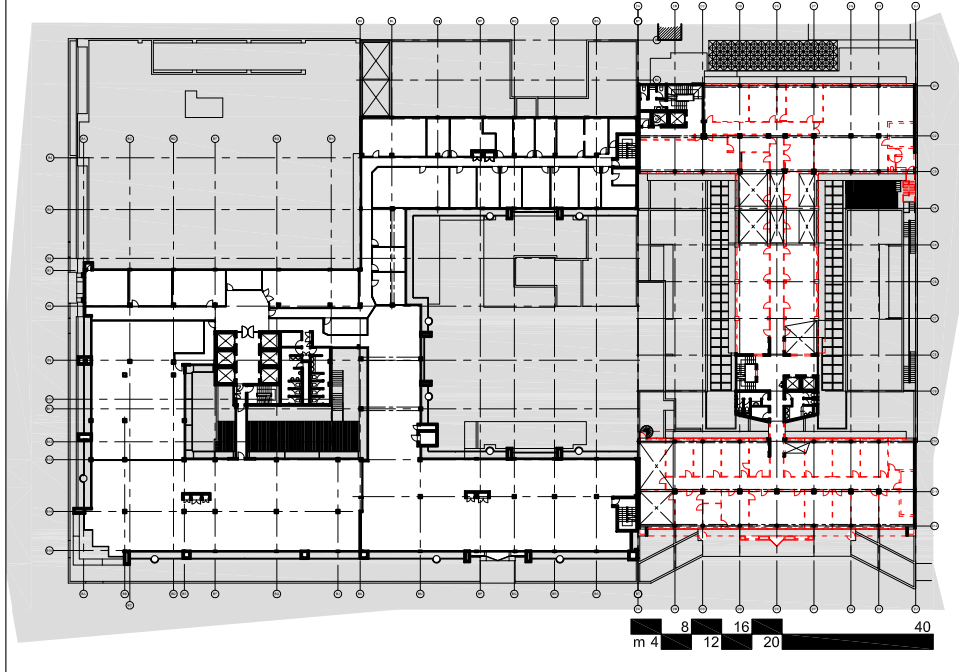
Fourth (Die Meent) / fifth (City Centre) floor plan

Scale as shown

Figure 8.24



Perspective legend

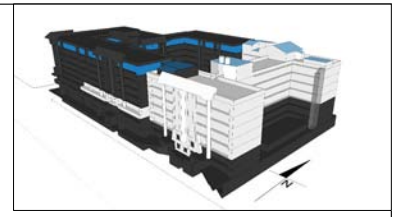


Demolitions

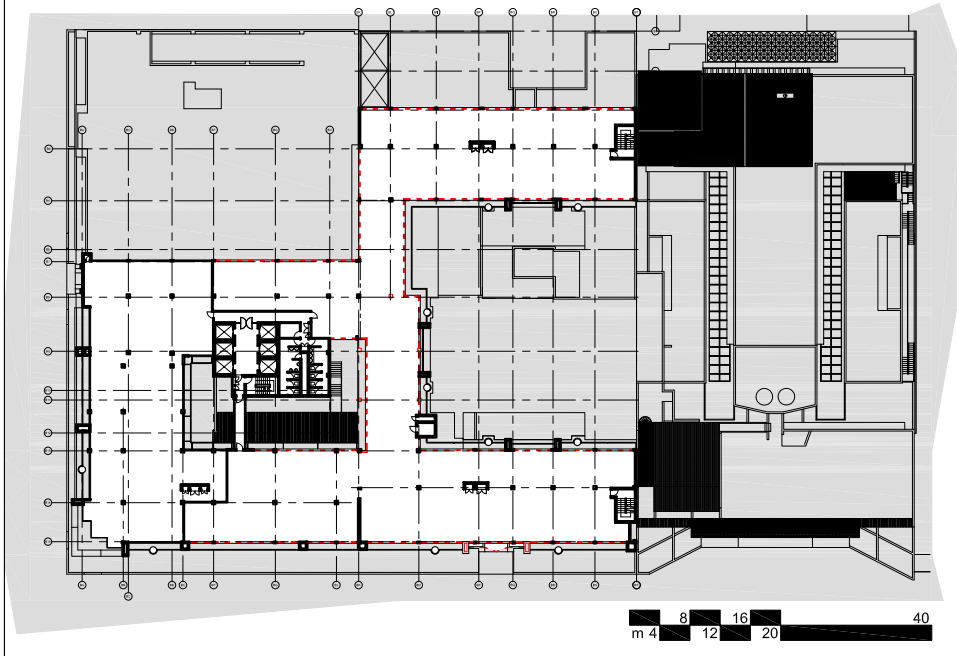
Sixth (Die Meent) / seventh (City Centre) floor plan

Scale as shown

Figure 8.23



Perspective legend



Demolitions

Eighth floor (Die Meent) / roof (City Centre) plan

Scale as shown

Figure 8.25

Site development

Site plan

Scale as shown

Figure 8.26