

application of rules of constitutional connection (arteriality and access constraint) can lead to emergent forms. By a few modifications to existing rules of street type and connection, it is possible to open up a greater diversity of possible patterns.

Such a kind of 'constitutional' system of structural generation – already used by the highway engineering tradition – may therefore turn out to be capable of, if not preferable for, generating the elusive emergent properties of coherence and organised complexity, found in traditional settlements, which are desired or appreciated by 'urbanists' of whatever profession. Perhaps surprisingly, then, the engineer may already have the rational foundations for generating urban structure, from which a variety of urban design creations may arise. The constitutional approach can unite both the 'road hierarchy' of the engineer and the 'local urban code' of the urban designer. So, the point 'where urbanism meets hierarchy' (opening Chapter 2) need not be a disurban rupture, but can be a seamless urban creation.

NOTES

- 1 Arguably, any town or city contains a mixture of planned and unplanned features. Here, 'unplanned' means 'not wholly planned' rather than 'wholly not planned'.
- 2 Alexander *et al.* (1987: 37).
- 3 Sorkin (1993: 127).
- 4 Tissue analysis is described by Hayward (1993) and Cowan (2002: 36).
- 5 This term coincidentally is the name of a classic work by Jeremy Bentham (1830).
- 6 Steadman (1998).
- 7 Just as Buchanan's principles of hierarchy did not require megastructural architecture nor cul-de-sac layouts, the principles of a constitutional approach to urban structure do not require the use of the grid, or neo-traditional street types – or even the street. The approach here could be applied to create a Buchanan-style quartet of primary distributor, district distributor, local distributor and access road if desired.
- 8 Rather than creating too many new patterns, we choose to tie back where possible into existing types or proposals, to demonstrate the diversity achievable by the basic constitutional form, that does more than promote one single type of preferred pattern peculiar to this book.
- 9 Le Corbusier (1951); a similar idea of articulating speed and scale has been suggested by Smithson and Smithson (1968).
- 10 Odani and Yamanaka (1997).
- 11 MacCormac (1996); Deckker (1998) and Hillier (1996) on mix of uses according to different streets; Lynch (1981); Beimborn and Rabinowitz (1991) on transit corridor districts.