provisions for shear reinforcement are, however, more elaborate and provide for the possible inclusion of diagonal reinforcement, which is uncommon in reinforced masonry sections.

A section is included on the design of reinforced masonry deep beams which may be carried out by an appropriate structural theory or by an approximate theory which is set out in some detail. In this method the lever arm, z, for calculating the design moment of resistance is, referring to Fig. 4.8, the lesser of

$$0.7\,l_{ef} \qquad \text{or} \qquad (0.4h + 0.2l_{ef}) \tag{4.21}$$

where l_{ef} is the effective span, taken to be 1.15×the clear span, and h is the clear height of the wall.

The reinforcement A_s required in the bottom of the deep beam is then

$$A_s = M_{Rd}\,\gamma_s / f_{yk}\,z \tag{4.22}$$

where M_{Rd} is the design bending moment and f_{yk} is the characteristic strength of the reinforcement. The code also calls for additional nominal bed-joint reinforcement to a height of $0.5l$ above the main reinforcement or $0.5d$, whichever is the lesser, 'to resist cracking'. In this case, an upper limit of $0.4 f_k\, bd^2/\gamma_m$ is specified although a compression failure in a deep beam seems very improbable.

Other clauses deal with serviceability and with prestressed masonry. The latter, however, refer only to ENV 1992–1–1 which is the Eurocode for prestressed concrete and give no detailed guidance.

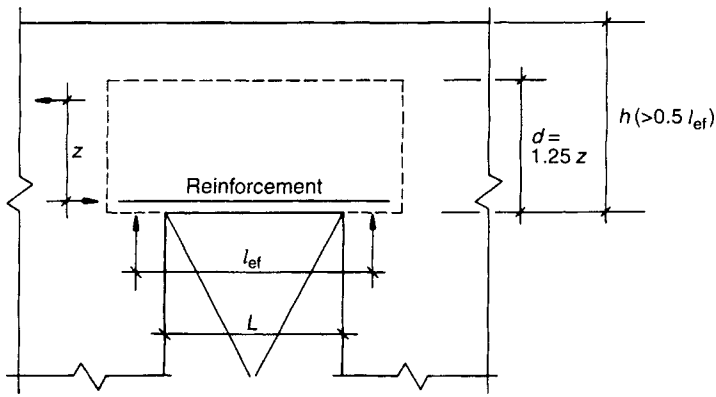

Fig. 4.8 Representation of a deep beam.

4.4.5 Sections 5 and 6: structural detailing and construction

Section 5 of ENV 1996–1–1 is concerned with detailing, making recommendations for bonding, minimum thicknesses of walls, protection of reinforcement, etc.

Section 6 states some general requirements for construction such as handling and storage of units and other materials, accuracy limits, placing of movement joints and daily construction height.