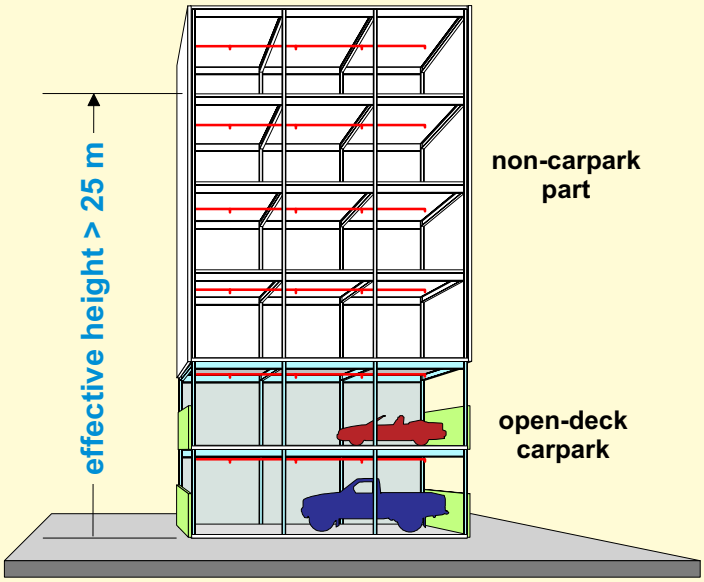
When are Sprinklers Required?

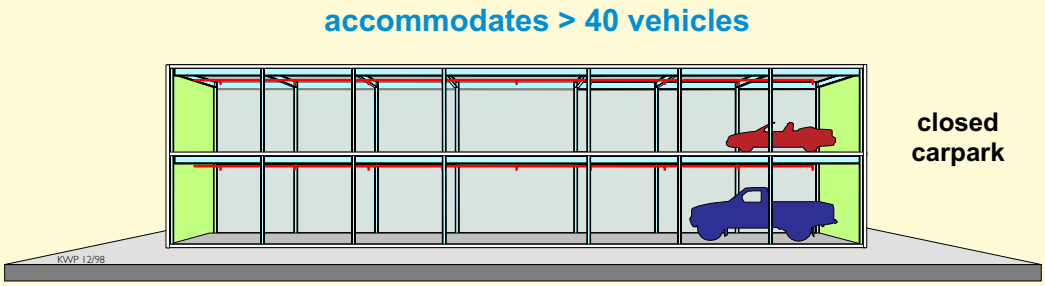
OPEN-DECK

When an open-deck carpark is constructed within a *multiclassified* building, the BCA requires the building to be sprinklered if its effective height is more than 25 m (BCA Table E1.5).



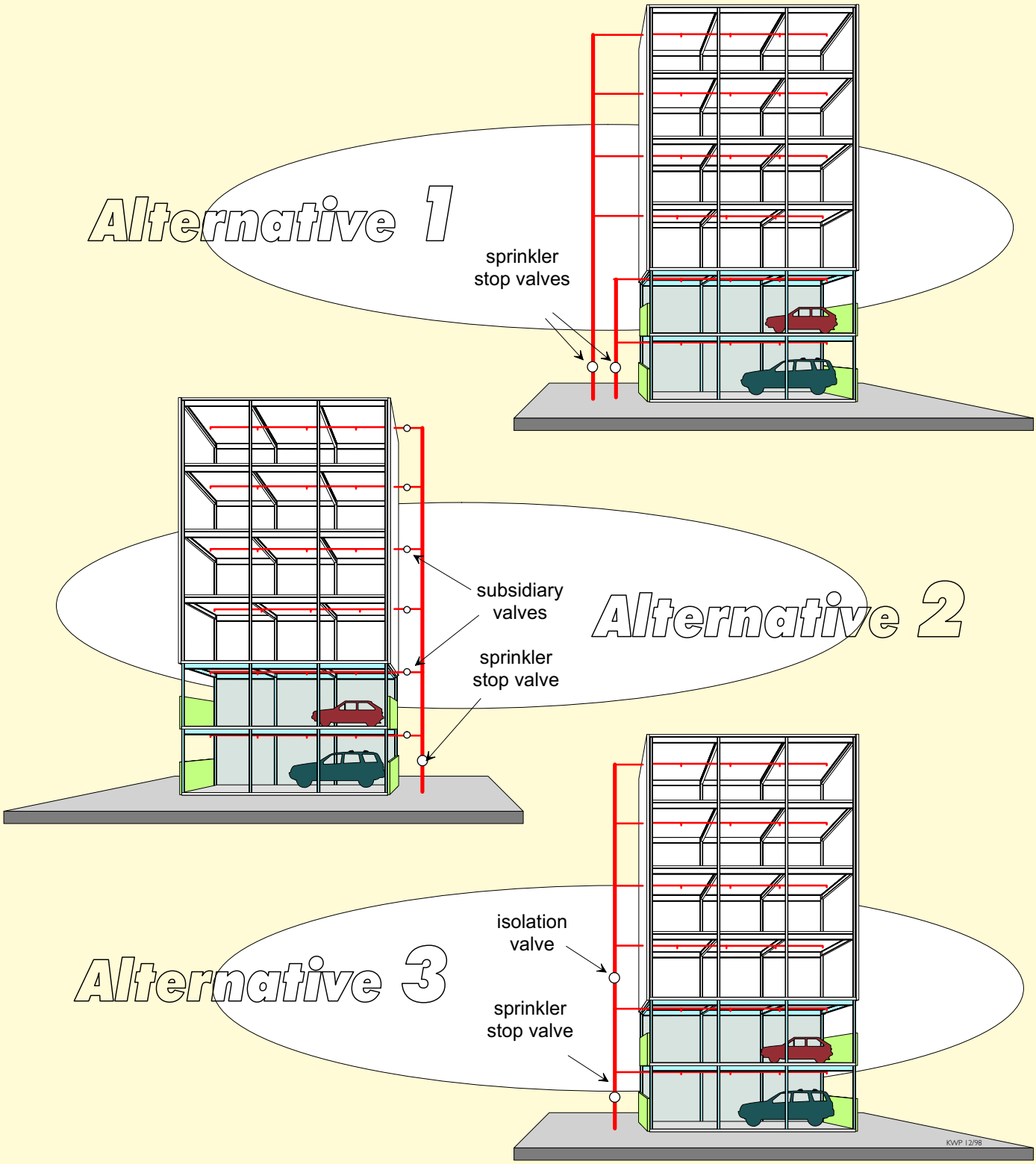
CLOSED

The BCA requires a closed carpark to be sprinklered if its effective height is more than 25 m; or if it accommodates more than 40 vehicles (BCA Table E1.5).



Sprinkler Requirements

The sprinklers must be installed in accordance with AS2118.1—1999 [4]. In buildings of Type A construction, the BCA requires the sprinkler system to be designed such that the non-carpark part of the building can be isolated separately to the carpark part of the building (BCA Specification E1.5, Clause 11). There are several ways of achieving this and these are shown schematically below.



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ECONOMICAL CARPARKS

A Guide to Fire Safety

300 PLUS

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Abbreviations used:

ESA/M = The ratio of exposed surface area to mass per unit length (see Appendix A for ESA/M of steel sections).

FRL = Fire-resistance level—the grading periods in minutes determined in accordance with BCA Specification A2.3 for the following criteria -
(a) *structural adequacy*; and
(b) *integrity*; and
(c) *insulation*,
and expressed in that order.
Note: A dash means that there is no requirement for that criteria. For example, -/-/- means there is no requirement for an FRL.

FSF = Fire-source feature— means-
(a) the far boundary of a road adjoining the allotment; or
(b) a side or rear boundary of the allotment; or
(c) and external wall of another building on the allotment which is not a Class 10 building.

Definition: **Bare steel** — steel members which have no fire-protective coating.

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