

AN ASSESSMENT OF ARCHITECTURALLY APPEALING SEMI-OPEN SHOCK MITIGATION DEVICES

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The reduction of blast loads on buildings is typically carried out by specifying minimum standoff distances. Achieving acceptable standoff distances may not be possible in city environments. Walls, the next logical blast mitigation device, typically affect negatively the urban landscape, and may therefore not be acceptable to city planners. This has led to the quest for architecturally appealing shock mitigation devices, a few of which were assessed in this present study. Figure 1 shows the model problem studied. The different alternatives are shown in Figure 2. The blast loads were computed with FEFLO. A typical run is shown in Figure 3. A comparison of the loads seen by window S1 is given in Figure 4. Note the large spread in values. For the better designs, the peak pressures are similar to that of a wall, whereas the peak impulse is approximately 60% higher.

