A Review on Doomsday Bunker

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Abstract: Now a day's increasing the wars especially from last few years. It is affected and dies no. of soldiers in army. All through these kinds of attacks are extraordinary cases, manmade accidents, blast loads are fact dynamic loads that need to be calculated just like earthquake and wind loads. The aim of this study on blast resist bunkers theories, the improvement of bunkers Security against the explosives in both architectural and structural design process and the design Techniques that should be carried out. Firstly, explosives and its types have been explained briefly. To have a better understanding of explosives and outlook of explosions will enable us to make Blast resistant bunkers design much more efficiently. Essential techniques for increasing the capacity of a bunker To provide protection against explosive effects is discussed both with an architectural and structural outlook.

KEYWORDS: blast loads, dynamic loads, architectural design, structural design, bunkers theories

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I.INTRODUCTION

Damage to the benefits, loss of life and social panic are factors that have to be reduced if the threat of war action cannot be stopped. Designing the structures to be blast resistant is not a realistic and economical option; however current engineering and architectural knowledge can increases the new and existing bunkers to reduce the effects of an explosion. The target of this study is to provide guidance to engineers and architects where there is a necessity of protection against the explosions caused by discharge of high explosives. The guidance describes measures for reducing the effects of explosions, therefore providing protection for human, structure and the valuable equipment inside. Only explosions caused by high explosives are considered within the study. High explosives are solid in form and are commonly termed liquefied explosives.TNT (trinitro toluene) is the most widely known example. There are 3 kinds of explosions which are apart explosions, small explosions and explosions caused by explosives attached to the structure. The paper includes information about explosives, blast loading parameters and reduces for blast resistant bunkers design both with an architectural and structural outlook.

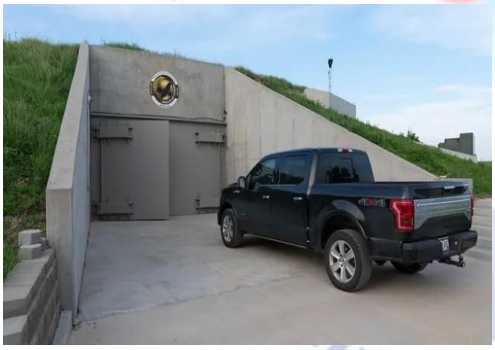

Fig: The Survival hidden behind 8-ton armored blast-proof doors.

II. ARCHITECTURAL ASPECTS OF BLAST RESIST BUNKERS DESIGN:

A primary requirement is the reduction of harmful failure of the entire structure or large portions of it. It is also necessary to reduce the effects of blast waves come into the bunker through openings and to reduce the effects of the settler of a bunker. In some cases blast resistant bunkers design methods, difference of opinion with beauty cover, availability variations, firefighting adjustments and the construction budget reduction. The target of blast resistant bunker design thinking of reduces the damages to the structure and its occupant in the event of an explosion. A bunker built to hide people or to protect the shoulders. It is an Atlas F missile silo, built by the US in the early 1960s at a cost of about $15m (£12.2m). It was one of 72 blast "hardened" silo structures built to protect nuclear-tipped Intercontinental Ballistic Missiles (IBMs) with ordnance 100 times more powerful than the bomb dropped on Nagasaki. Although it was out of sight and mind to the average US citizen, it played a crucial role in a geopolitical agenda of extinction-level of significance during the Cold War. There are 75 people are stay inside the bunker for five years. The design of the dooms day bunker is fixed with all the facilities like (theatre, swimming pool, sports room, library, food storage, gym etc...) inside the bunker. Over 60 meters (200ft) below the surface of the Earth, we looked over racks filled with 25-years shelf-life food stored on the grocery store level a convincing replica of a supermarket.

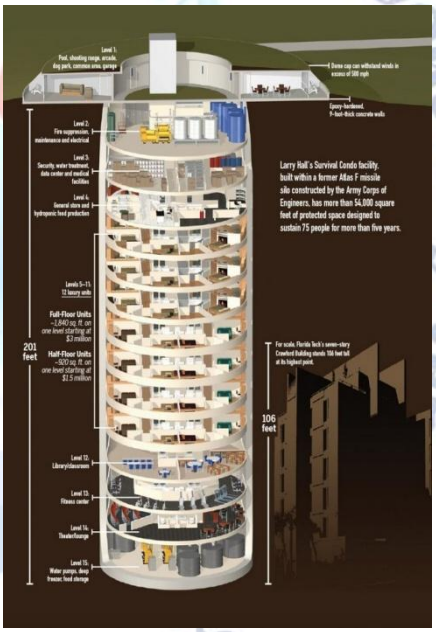

Fig: Luxury structure inside the doomsday bunker.

Fig: Pool inside the bunker.

III. STRUCTURAL ASPECT OF BLAST RESISTANT BUNKER DESIGN:

Once the initial blast wave has passed the reflected surface of the bunker, the top excess pressure

decomposes to zero. As the sides and the top faces of the bunker are exposed to overload. Blast loadings are extra ordinary load cases however, during structural design, this effect should be taken into account with other loads by a sufficient ratio. Similar to the static loaded case design and blast resistant dynamic design also uses the limit state design techniques which are collapse limit design and functionality limit design. In collapse limit design the target is to provide sufficient plasticity to the bunker so that the explosion energy is distributed to the structure without overall collapse. For collapse limit design the behavior of structural member connections is critical. In the case of an explosion, significant conversion movement and moment occur and the loads involved should be transferred fromthe beams to columns. The structure doesn't collapse after the explosion however it cannot use anymore. The structure of the bunker is with the all needs inside the bunker for around 5 years.

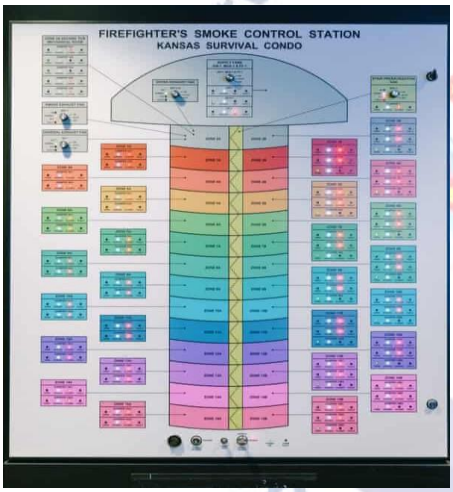

Fig: The smoke suppression system can exhaust fumes from deep below ground level.

ADVANTAGES OF DOOMS DAY BUNKER:

- ✓ It is useful to resist the nuclear bombs.
- ✓ This is helpful to escape from bomb blasts.
- ✓ This is useful to cold wars.

DISADAVNTAGES:

- ✓ The cost of construction is very high.
- ✓ More man power is used while constitution of the bunker.

IV. CONCLUSION

Doomsday bunker is constructed over the 70 floors inside the earth surface and nearly 575 families' around 5000 people escape from bomb blast it useful to resist the bomb blasts. Which is more useful in cold wars? The aim of doomsday bunker is to resist the nuclear bombs and to keep safe the shoulder and weapons inside the bunker. And also defeat the enemies stay inside the bunker. To prevent the structural and human loss. The structural elements are designed to prevent the structural loads but it should be remembered that, blast loads are unsure, immediate and maximum. The bunker which will receive less damage with a selected safety level and a blast resistant architectural design from wars. This study is inspire for make the bunkers in bomb resist way.

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