

Building Your Laser Tag - Multi-level Arenas

Multi-level structures in Laser Tag Arenas.

This document will detail some of the considerations regarding second-level structures for laser tag Arenas.

A second level structure can add additional playable space as well as that extra dimension to the gameplay itself. However, there are some important considerations:

- 1) Budget:** Are the extra building costs available in your budget
- 2) Building Requirements:** Will your municipality approve of a second-level structure for your site.
- 3) Is there time?:** A second-level structure is a critical decision that must be made early in the planning phase.

ASA or Mezzanine?

First, let's look at the terminology around second level structures in Laser tag arenas. Is the second level an **ASA** structure or a Mezzanine floor. (Please note, **ASA** stands for **Area of Sports Activity**.)

Most architects, tradesmen, and more than likely yourself would refer to the elevated level of your arena as a mezzanine floor. However, the term “mezzanine” comes with very specific building code requirements which are not necessarily applicable to laser tag arenas.

With a mezzanine floor, the main consideration for code adherence is with the **ADA (Americans with Disabilities Act)**. This Act requires 1 to 12 slope ramps between the ground floor and the second level

If a laser tag arena had to adhere to the 1:12 slope rating most second-level structures would not be practical. Let's look at the numbers:

If the second level were 10 feet above the ground floor, a 1:12 ramp would need to travel 120 feet. A typical ramp is 3 foot wide, as such the total footprint required for the ramp would be 360 sqft.

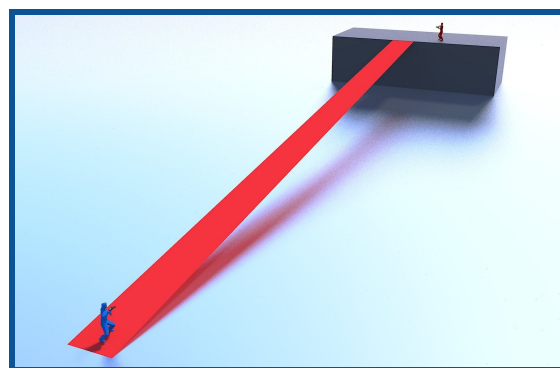
This 360 sqft is virtually unplayable. This will have a dramatic impact on the game experience and reduce the players in the arena by 3 to 5 vests.

This would be a potential revenue loss between 50,000 and 75,000 annually! Thankfully, the American Disabilities Act guidelines provide exceptions for exactly these circumstances, as long as a few requirements are met:

1) The Area Of Sports activity, or ASA, cannot exceed $\frac{1}{3}$ the size of the ground floor footprint. The industry typically limits this to 30% to ensure compliance since many of our structures are not square or rectangular.

2) The main level is 100% compliant with the American Disabilities Act

3) The game experience remains fair and equal for all players. This means that there will not be any Bases, Targets, Energy Gates, or features on the ASA level which cannot be utilized from the ground floor level.



Building Requirements:

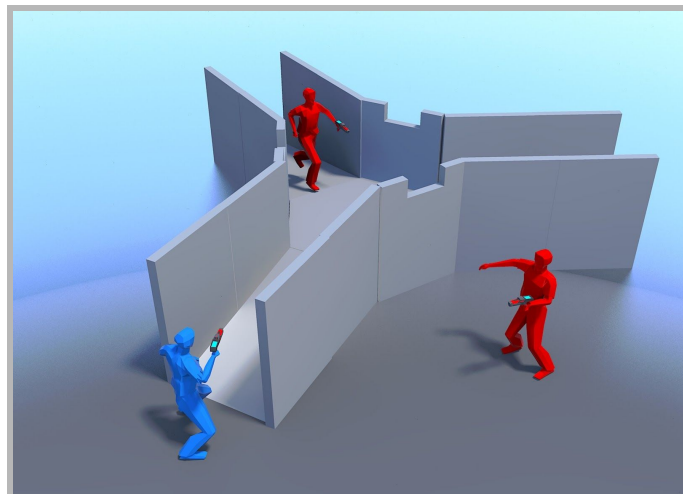
For an ASA to work within your arena, there are a handful of requirements that your space must-have.

- 1) 18-foot clear height on the ceilings** - The clear height indicates the lowest hanging point of any sprinkler heads, light fixtures, HVAC ductwork, etc.
- 2) Sufficient load rating of the ground floor concrete pad** - Most locations will have sufficient structure in place, but for some older buildings of unique situations footers may need to be poured.
- 3) An Upgrade of the Sprinkler system** - You will need to add additional sprinkler coverage under the ASA deck as well as ensuring the main sprinkler system can support the additional pressure required.
- 4) Arena footprint of 2,800 square feet or more** - Even with the reduced slope requirements, if your arena space is smaller than 2,800 square feet the ramps may take up too much space to make the ASA a viable option.

Elevated Platforms:

If you have read the above building requirements and your space can not utilize an ASA structure, then a viable alternative is to use elevated platforms.

Elevated platforms differ from an ASA structure because players cannot go underneath them. They can range in height from 4 to 6 foot so the ceiling height can be much lower than the ASA.



Though they will not add additional playable space to the arena, they certainly improve the game experience. Players will use these areas as strategic towers to add an additional dimension to the game.

Impact On The Budget.

If your building meets the necessary requirements, the next step is to look at the cost for your ASA Structure.

Most municipalities will require the ASA structure to be constructed out of Steel. As such, costs tend to fluctuate with market trends and tariffs.

Most steel structures cost an average of 85 to \$100 per square foot.

There are a couple of things you can consider to help bring the costs down.

1) Irregular shapes - Squares and rectangles are the lowest cost to build. Catwalks and bump-outs require greater complexity and costs in construction. Try to stick to a common shape.

2) Railings - The more railing footage you have, the more costly the build. A common design feature is to have a cutout in the middle of the ASA structure. This cutout allows for a center focal piece to transcend the first to the second floor. but try to limit the size and shape of this.

3) Elevation changes - This is rare, but in some cases where there is an obstruction in the ceiling height requiring a change in elevation, you will certainly see a higher cost for the engineering required to accommodate the design.

Most areas require the ASA structure to be made from Steel. However, some municipalities will allow for wood structures. These have an associated cost of between 50 and \$60 per square foot. This seems like a significant cost saving, but there are a few considerations to look at before making your decision.

Fire Retardant - Many locations may allow wood if a fire retardant is added to all the paint. It has been our experience that this can exceed the cost of the steel structure.

Longevity - A steel structure will hold up far better to the higher moisture level of the fog-filled arena.

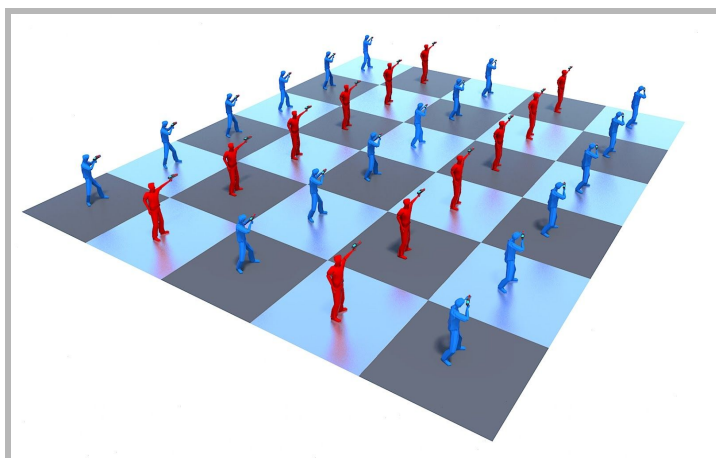
Residual Value - The steel structure has a far higher resale value - albeit, even as scrap metal.



Income Potential of an ASA Structure.

We've now established that an ASA structure will be an investment of 85 to \$100,000, so it begs the question, what is the ROI?

This will depend on the size of the ASA structure and your location's demographic makeup.



Your arena needs approximately 125 square feet of playable space per participant. If you are adding in a 900 square foot ASA structure, you will add an additional 7 players to your game.

So how much income will these extra vests generate over a year? To find out how much income a single vest can generate in a year, Delta Strike did a statistical analysis over a broad range of its clients, taking into consideration:

The number of games played, The cost of a game, and Game Discount variances.

From this, we estimated that the average laser tag facility will generate around \$12,000 per vest per year.

Using this calculation, you will see that the additional square footage yields an \$84,000 increase in revenue, and this is ongoing every year! Knowing that the R.O.I is 12 - 16 months, it is easy to see why most arenas have ASA structures.

A final thought on ASA structures. Be careful not to fall into the, "If you build it, they will come" mentality.

There are some facilities that are fortunate to be the only laser tag in the area - particularly if they are in a smaller population base.

Just because you have adequate space, ample ceiling height, and all the other necessary elements, it doesn't mean an ASA is right for you.

For these locations, it may not be worth investing in an ASA structure because the competitive analysis doesn't warrant the additional expense. Or it would be unreasonable to assume the additional capacity would be utilized. As part of our free consultation, your Delta Strike representative will work with you to help review if an ASA structure is the right fit for your business