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Shadow Wall

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I wrote the following article for creating Shadow Walls for Children's museums. However, they are very effective at home haunts as well. So I thought I would share it here:

Shadow Wall

A shadow wall, also known as a Silhouette Wall, is a phosphorescent wall used with a timed light source to capture and display children's shadows.

Children pose in front of the wall while a light flashes creating a black shadow on a green glowing wall. This allows the kids to turn around and see their shadow. The shadow fades, allowing another child to take a turn.

Shadow walls are popular in children's museums and other indoor play areas. However, they can also be made inexpensively for birthday parties.

This article will give advice for creating each component in a professional manner and lower cost hobbyist alternatives.

Paint

Phosphorescent paint comes in many varieties, most of which are designed to maintain their glow for a long time. Shadow walls are unique in that they require a paint that is relatively bright, charges very quickly, and decays very quickly. To meet these criteria, Glow Inc. designed a custom mix called the [Shadow Wall](#) Formula. While meeting the above requirements, it is also designed to resist the damage caused by kids touching it. It applies easily with nominal smell and no fumes.

Obtained from
Omarshauntedtrail.com

You will need 1 quart of Shadow Wall Formula per 4' x 8' sheet.

Walls

The wall's structure can be created using sheet materials like drywall, wood, vinyl, plastic, or glass.

The best materials are clear, such as glass or clear acrylic (Plexi-glass). If using glass, make sure that it is thick enough that it can not be broken by excited children. Clear acrylic is a lower cost, easier to use material. However, clear acrylic scratches easy and requires some maintenance.

For clear wall materials, we suggest you paint the rear side of the clear sheet with several layers of Shadow Wall Formula and then a layer of standard acrylic fluorescent white paint. Allow to dry between layers. Then hang or glue the glass to the wall with the painted side facing the wall. While costly, this creates a very smooth, professional appearance.

For opaque materials like wood, vinyl, plastic, and drywall, prepare and prime the surface as you would for any other water-based paint. Add several layers of Shadow Wall Formula, allowing it to dry between layers.

For a cheaper alternative, my personal preference is corrugated plastic (Coroplast). It can be acquired at most sign shops for under \$20 for a 4'x8' sheet. If you go this route, get white and do not prime it before adding the glow paint. It can be cut into manageable sheets for storage and weighs very little, making it ideal for temporary installations like parties.

Room Lighting

A common mistake is to have too much ambient light in the room. If you want a bright shadow wall and high contrast shadows, then you need to keep the room just above pitch dark. The room would ideally be painted flat black and no light source would directly shine on the shadow wall. This includes light from other rooms when the door or curtain is open.

Red light will increase the discharge speed of glow pigments used in the Shadow Wall Formula. This can be used to your advantage in professional installations to provide light for entrance and exit while also quickly clearing the wall for the next child. While any red light will work, I personally suggest red LED par cans.

Children waiting in the queue should be in a dimly lit room so their eyes have a chance to dark adjust, preferably for 5 or more minutes.

Charging Light

The light to charge the shadow wall should emit as much ultra-violet light as possible, preferably with nominal visible light.

Visible light adjusts the children's eyes for daylight and the glow will therefore appear less bright.

That being said, disposable cameras with flash are an effective charging light for shadow walls used at kid's birthday parties. They can typically be acquired for free by asking nicely anywhere that processes film. Strobe lights are another inexpensive alternative. If you use these visible light alternatives, consider telling the children to close their eyes for the flash.

For professional installations, use only ultra violet lights, also known as black lights. For crisp edges on your shadows, use a light with a single point of origin like a bulb. Tube or LED black lights have a wider origin, which will blur the edges of the shadow. Black light bulbs sold for parties that look similar to regular screw-in light bulbs perform very poorly.

Therefore, I suggest a high powered "cannon" or stage fixture like Chauvet's Black Shadow 400w Blacklight. You can use the light's spec sheet to determine its beam angle. With this angle, you can determine how far back to mount the light for optimum performance.

I suggest you mount the light 1-2 feet from the floor. This low aspect will make most shadows taller than the children while keeping their feet in frame.

Using your timer, adjust the "flash" time for optimum performance. Longer flashes create a brighter glow. However, longer flashes also blur the edges of the shadow as children move.

Timer

For home use, the timer is a human pushing a button.

For professional installations, you will definitely want to add an automated timer. This

can be accomplished hundreds of ways. I personally use a computer, Enttec DMX USB Pro, Chauvet DMX-4 Relay/Dimmer, and Vixen software.

Here is a typical Timer sequence started by human trigger:

00.0s Countdown clock 5
01.0s Countdown clock 4
02.0s Countdown clock 3
03.0s Countdown clock 2
04.0s Countdown clock 1
04.9s Red light turns off
05.0s Ultraviolet light turns on
05.5s Ultraviolet light turns off
(Note: this is when the wall glows)
30.0s Red light turns on