**Term 2 Physical Computing Project:**

**A close up of a cluttered table

Description generated with high confidence**

**Affective Gun**

**Introduction**

The idea evolved originally was inspired by the Sand Table [[1]](#footnote-1)[[2]](#footnote-2)[[3]](#footnote-3)examples I have seen on the web. Given the time frame limitations and the lack of originality I decided to look at the idea of movement incorporating stepper motors as my starting point. Although the sand table ‘meme’ is attractive enough to make and play with, it did not provide me with a creative space for me to express myself, albeit I could have designed some patterns originating from programming on my part.

I took the basic skeleton of the Y axis of a plotter/3d printer as the stating point for my fabrication. This has proven to be less than ideal as the friction I encountered using rods and linear bearings was higher than anticipated. One improvement will be to use din rails [[4]](#footnote-4)and v-bearings[[5]](#footnote-5).

The fabrication as in the last project in December was mostly with 3D printed components. At the demonstration I only showed the project with movement in the Y axis. I decided to remake most of the project and fabricate parts to enable the movement about the Z axis. (This was always my intention, time being short this was completed after the demonstration).

All the parts were drafted in Blender[[6]](#footnote-6), previously I have used OpenScad [[7]](#footnote-7)but Blender proved to be far more efficient in my work flow. I include the Blender files and .stl files I used to construct the gun mount.

Power is delivered to the steppers via a 12V power supply, this is required as 5V (independent to powering the Arduino Mega) would not be enough

**Aesthetics**

I decided I would make something compelling and memorable for my object that would be mounted on my mobile platform. I also wanted something that would create affect [[8]](#footnote-8)for the observer.

Guns have been a hot topic lately, the demonstrations in the US following so many killings in US schools and the US president’s lack of will to ban automatic weapons.

The gun rotates quite fast and can be operated manually for the moment, in Y, Z and Y+Z axes.

I want to create a reaction, to draw attention to how disturbing weaponry is – ore alarming as well when in movement.

Next Steps

I wanted to create this as an interactive piece but had some problems is merging code for the Sparkfun ZX sensor [[9]](#footnote-9)(I used with my previous exhibit with more success), as well as the Easydriver [[10]](#footnote-10)modules in the same installation. The operator has to press keys to initiate movement, this is disappointing to me, but I am determined to get this part working in time for the exhibition (popup) in early May.

As already stated, a better system with less friction can be achieved with din rails and v-bearings. I only came across them in my research after fabricating all the other parts. Again, I hope this to be incorporated in the next incarnation of the project.

1. https://www.raspberrypi.org/blog/sisyphus-kinetic-art-table/ [↑](#footnote-ref-1)
2. https://blog.adafruit.com/2017/05/22/this-arduino-zen-garden-lets-you-draw-in-the-sand-remotely/ [↑](#footnote-ref-2)
3. <https://blog.adafruit.com/2017/05/22/this-arduino-zen-garden-lets-you-draw-in-the-sand-remotely/> [↑](#footnote-ref-3)
4. <https://uk.rs-online.com/web/c/connectors/terminal-blocks-din-rail-terminals/din-rails/> [↑](#footnote-ref-4)
5. https://www.amazon.co.uk/V623ZZ-Miniature-V-groove-Bearing-3x12x4mm/dp/B078NVLJ56/ref=sr\_1\_2?ie=UTF8&qid=1522330016&sr=8-2&keywords=v+bearing [↑](#footnote-ref-5)
6. https://www.blender.org/ [↑](#footnote-ref-6)
7. http://www.openscad.org/ [↑](#footnote-ref-7)
8. https://en.wikipedia.org/wiki/Affect\_theory [↑](#footnote-ref-8)
9. https://learn.sparkfun.com/tutorials/zx-distance-and-gesture-sensor-hookup-guide [↑](#footnote-ref-9)
10. https://learn.sparkfun.com/tutorials/easy-driver-hook-up-guide [↑](#footnote-ref-10)