A Bit of Fun

Making ‘Playgrounds’

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When the date for the ConTEXt meeting approached, Hans asked if I could prepare a base for a ‘playground’ for the “a bit of fun” section of the programme. This short article illustrates the journey to the ‘playgrounds’ distributed at the meeting.

1. The beginning

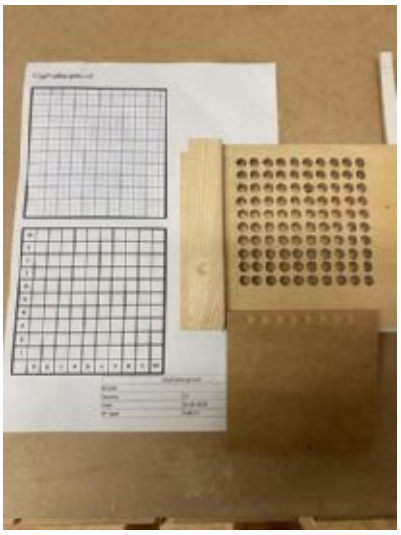
While preparing for the upcoming meeting in Sibřina, Hans asked me if I could think about making a base for a ‘playground’ that could be used in one section of the meeting. Each meeting participant would make their own ‘playground’ in order to play with it.

A ‘playground’ would have a ten-by-ten grid and would allow a participant to make a simple digital picture by placing objects to represent pixels. The rows and columns would be labelled. I thought about possibilities. The base should not be too big. What could the coloured objects be? I considered coffee-beans, beans, lentils or chickpeas. But I thought that none of these were satisfactory. Finally I settled on juniper berries, which are fairly even in size, mostly spherical, and dark in colour.

In order to get an idea of the work involved, I made a MetaFun drawing of the base. Then I sat down and made an open box with crossbars of wooden sticks to make the grid. So far so good; the result was looking like what I was after. However the downside appeared to be that it would take too long for the participants to make during the meeting. Also, I had to consider that inexperienced craftspeople would find it a nightmare to deal with wooden sticks as little as 10 by 2 by 3 mm. So no, this was not what I needed.

I discussed this with Hans and looked for another approach. I started experimenting with HDF (**H**igh **D**ensity **F**iberboard), a material usually used for cabinets. With a sharp drill I could make dimples, which could keep the spherical objects in place. I made another drawing in MetaFun indicating the centres of the dimples.

The wooden prototype



The template

Fig. 1. Preparation

2. Production

Because my intention was to make at least 20 bases, I could not avoid making a drilling template first. After all, each plate would have 100 dimples. Furthermore, a template improves accuracy and allows faster production. The template had a strip of wood to align it with a base, and a vertical lever-clamp clamped the template to the base, as shown in picture 2.

I first cut 24 bases from HDF on a table saw. The drilling was then done on a drill stand with an enlarged base with a moveable fence. This fence made it possible to drill holes exactly in line. To drill a row of 10 dimples in the bases, I set the fence for the row. Then for each base, I clamped the template to the base and drilled 10 dimples as I slid the base along the fence. Drilling all the dimples involved setting the fence 10 times and clamping the template to a base 240 times. Including drilling the template, I drilled 2500 times...

Sanding helped to remove burrs from drilling and break the sharp edges from sawing.

Then I painted the bases. Because a brush would cause lakes in the dimples, I decided to use spray paint. To my surprise I found that HDF is not easily covered with paint. The material sucked up the paint, ending up with a rough surface, and the colour looked miserable. So I sanded the base and applied another coat. The result was not perfect but acceptable.

The last step was to prepare labels for the rows and columns. Again this was achieved in MetaFun.

3. At the meeting

Drilling number 2500

Drilled bases

Fig. 2. The last dimple drilled!

The first session of the meeting was dedicated to finishing the ‘playground’. Each participant received the plate, a set of the horizontal and vertical labels, and an appropriate number of juniper berries. Their task was to cut the labels to size and glue them into place. Not a big deal; everybody did it nicely.

Now it was Hans’s turn. He explained that this ‘playground’ can be used to “draw” simple pixel-based pictures. The newly-added library “potrace” will try to interpret a photo of the ‘playground’ and turn it into curves, giving a vector graphic.

4. Conclusion

It was a bit of a challenge for me, but also big fun to prepare these ‘playgrounds’. Furthermore, we could get everybody involved by letting them finish their ‘playground’. And last but not least, Hans gave everybody the chance to experiment with the newly-added tracing library “potrace”.

Fig. 3. A first trial in the workshop