# Entertainment Design & Technology

## Jeromy Hopgood – Design for the Entertainment Industry

# Tools of the Trade: Drafty (part 1)

Drafting has always been one of those important catch all skills that is important to people in a wide range of design / tech jobs in the entertainment industry. Lighting designers, scenic designers, technical directors, props artists, even sound guys will all have to generate some type of mechanical draftings at some point in their careers. Traditionally speaking, this meant hours spent hunched over a drafting table with a T-square, triangles, pencils, and high threshold for pain and frustration. With computers becoming a ubiquitous tool in every design studio, most designers these days have left behind their drafting boards and traded them in for some type of a CAD (computer aided drafting) solution. While there have been dozens of programs over the years to offer a digital replacement for hand drafting, in the entertainment industry the two most commonly used programs are AutoCAD by Autodesk and Vectorworks made by Nemetschek. Both of these programs are robust, powerful CAD solutions that offer 3D rendering capabilities and a wide range of add-ons for just about every use one could imagine. Not surprisingly, both of these applications are as expensive – in the thousands of dollars – as their options are extensive .

Recently, a newcomer to the field called Drafty (https://drafty-app.com) is challenging the notion that a CAD solution has to be either bulky or costly. The Drafty model is to offer a computerized drafting solution that feels like as much like the old pencil and paper model as possible. I recently sat down for a chat with Lucas Krech, one of the creators of the software, to chat a bit about their program and what makes it unique. The following questions are the first half of that interview.

**1. If you had to sum up Drafty in an elevator pitch, what would you say?**

Drafty brings the ease of hand-drafting and the precision of CAD to the 21st century mobile designer living in the cloud… Is this your floor?
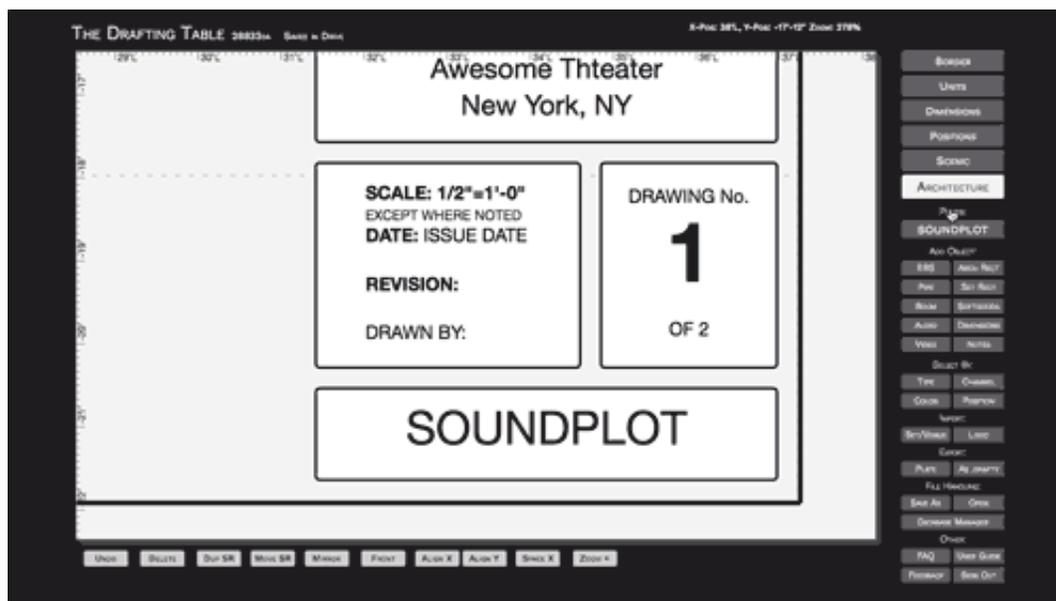
## 2. What are the origins of the program?

I used MiniCAD and then its rebranded Vectorworks incarnation, becoming a power user up to and including having my 3D drafting featured in several getting started guides. I remember the excitement when they came out with their 'Spotlight' module as it appeared they were giving real attention to theatrical designers. Sadly, it turned out that despite the additional cost of those tools you still needed to spend hundreds of dollars on 3rd party plug-ins just to make it mostly work. And it was still slower than drafting by hand a lot of the time. Certainly for beam sections and layouts.

Plus the cost of the software is just unreasonable for a theatrical designer. It is priced for their core market of architects who make hefty 6-figure salaries. And I can respect that. But, I'll tell you a secret, I've never made 6 figures with my design work. I know people regularly working on Broadway who don't. So how can I justify paying for software aimed at that market? I can't. We did it because there were no other viable options. But I wanted to see a good, dependable tool for the hardworking artists out there who may be taking gigs for $500 or $1,000 dollars. Or less! You shouldn't have to work hard for two months creating art to barely afford a tool that you then need to rebuy in a year or two because they don't do patches for OS upgrades.

I've also done some teaching and seen really bright, intelligent students with an affinity for light become blocked when presented with traditional CAD programs. I wanted to remove that barrier. I wanted it to be easier to draw a light and a pipe and have them intuitively relate to each other in a way a novice could understand.

Further, in a real world scenario I would use, as a power user, maybe 10% of the tools. **If I only need 10% of the tools why not make a program that has the 10% I actually need, is built from the ground up to make a plot, and costs 1/10th the price?** And that's the seed of Drafty.

I know a lot of people in the software industry. My wife is a lifelong tech veteran having worked for OSC, Apple, and others. She also develops independent apps for iPad. Watching her work on her iPad App, The Recipe Box, got me thinking about an easier interface for drafting. I knew what

should be possible, I just didn't have the skills to do it.

I stewed on the idea for about three years and then chatted up my friend Max, who I knew had a keen interest in graphics programming, while we were out camping last summer. I pitched him the idea and he told me to send him a functional spec. I dutifully went home, researched "What is a functional spec?" and "How do you write a functional spec?", wrote one up and sent it off. He took a look, thought it could be a fun project, and we began prototyping.

**3. There are a lot of solid, time-tested drafting applications on the market. What sets Drafty apart from those?**

I would actually flip this question around and ask what makes every other graphics program on the market the same? Vectorworks, AutoCAD, CorelDraw, Photoshop, SketchUp, Illustrator, you name it, all do more or less the same thing. Sure, the tool sets are slightly different and they are optimized for different versions of precision (pixels, inches, percentages) but they are all essentially a big box of pencils, pens, drawing templates, and paper.
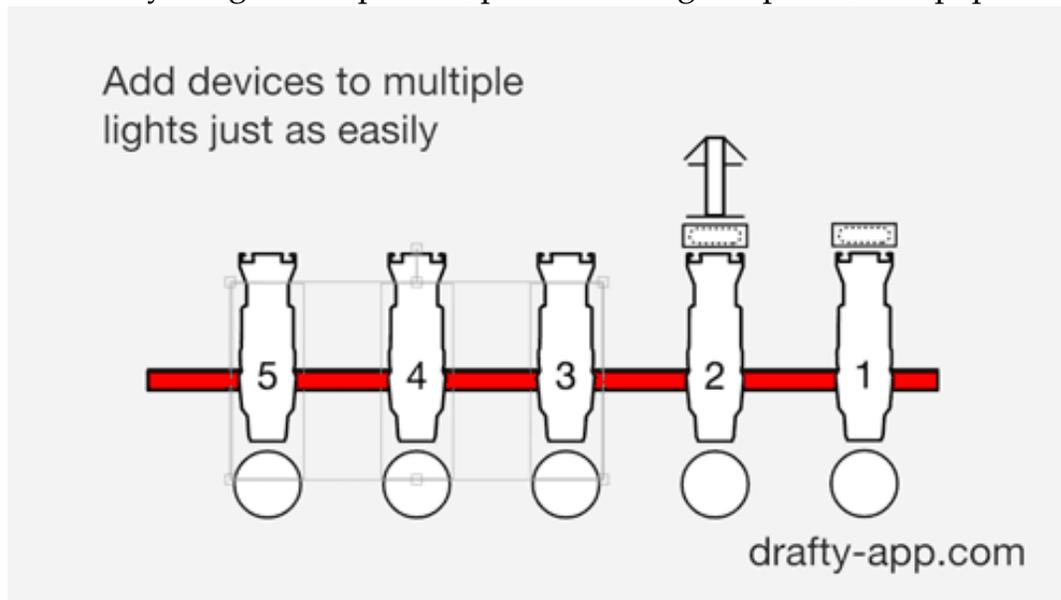


*Drag and drop one or more lighting fixtures at the click of a button*

Drafty is an HB Pencil, Drafting Table with Drafting Machine, and a Lighting Template. You can't really do much with Drafty other than make light and sound plots really really fast. This is by design. A lightplot, with very few exceptions, is actually an incredibly simple document. Broadway, Grand Opera, touring Ballet all happened with a pencil and paper until very recently. My favorite plot I ever got from a designer was literally sketched on a napkin with a Papermate Flair pen. We offer a napkin to sketch on at our landing page too. 🙂
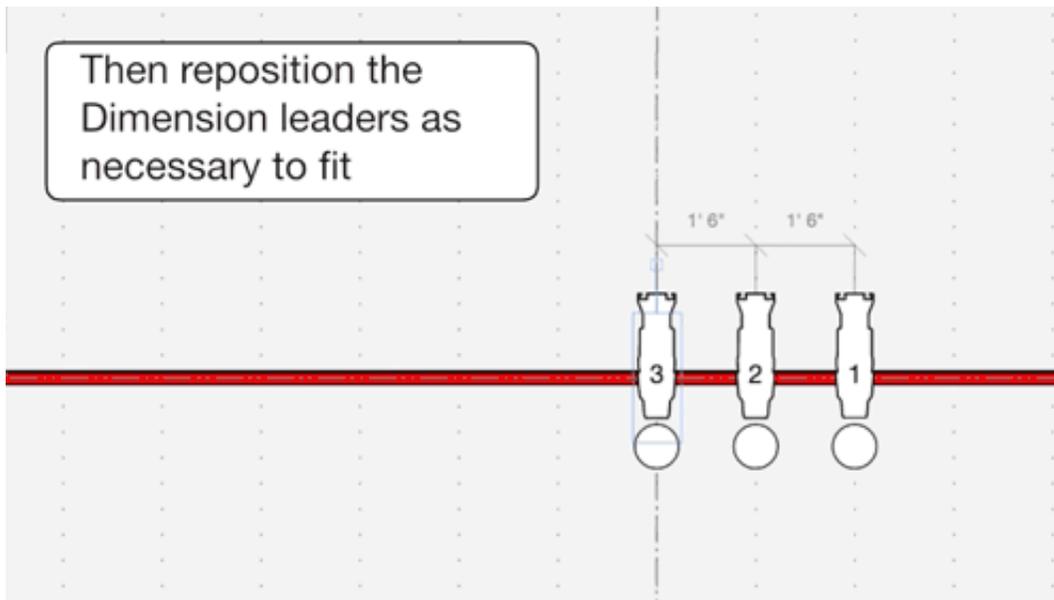
*Dimensions are a snap, literally.*

We don't have arcane graphics relating to myriad versions of the same tool for slightly different purposes. We have a button called 'Pipe' which you press and get a rectangle whose length can be scaled and whose depth is fixed at 2.5". We have a button called 'Light' which you press and get a realistic looking outline of a Source-4. Grab the light, move it on to the pipe. It snaps into place and gets numbered '1'. Duplicate the light and the copy is numbered '2' and duplicates along the pipe by default.  Drag the pipe, its lights follow.  Students can begin learning the basics of graphic layout for Lighting Design by using the program because we intentionally made it hard to do your paperwork wrong. We have a ton of overrides, and more coming, for users who want more control or to cover edge cases but 90% of the time the tool just does what you want it to do and saves you a bunch of time on data entry.
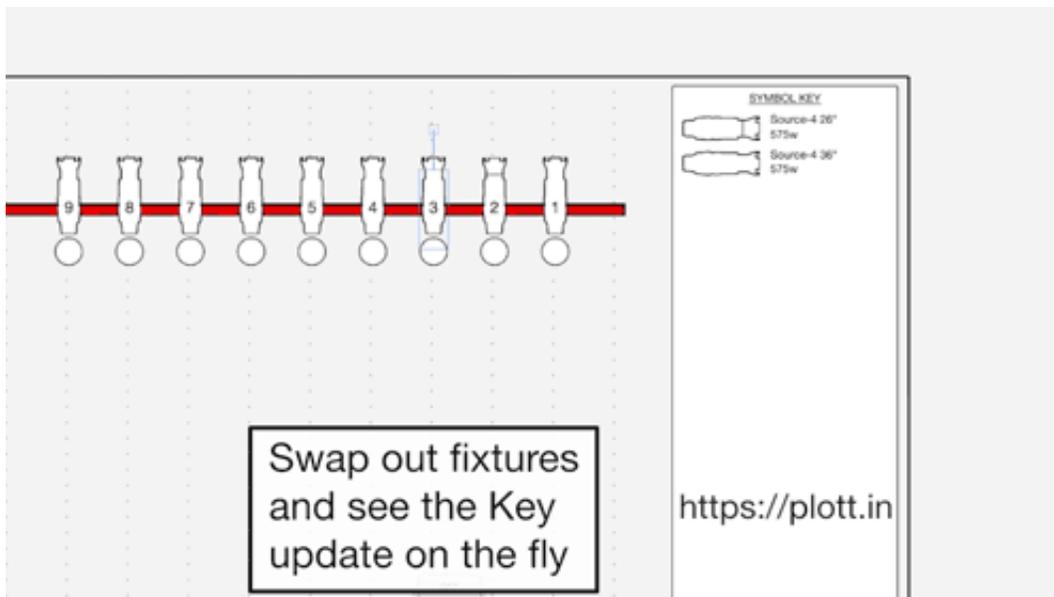


*The symbol key updates seamlessly when you add fixtures*

### 4. I notice that the program is delivered as a web app through your web browser. Why did you take that route?

Ease of deployment.

Our first paid customer was the Technical Design program at Bath-Spa University in the UK. We were still in Beta and had a ton of bugs. Being web-based we could see errors appear on our server logs and analyze the problem in real time. Fix the problem in real time. Deploy a software patch to our servers that the browser picks up automatically in real time. And then watch the errors disappear from the logs as each work station grabbed the new code. All in real time. 20 plus users every Tuesday working hard with Drafty for like two hours. It was amazing.

There are also a ton of ancillary benefits. Imagine your fancy computer crashes the day before you are about to go on tour with a ballet company (happened to me once). Or worse you are on tour and have no time to get to a store. Currently you are out at least a $1000 on hardware and better hope your software works with the current OS or you may be out thousands there too. With Drafty you just grab any old laptop, open an Incognito window in Chrome to keep all your info private, and keep drafting. Also, because it leverages the web you don't need to pay for those top end graphics cards to support the 3D engine you are never going to use anyhow. So Drafty works as well on a $400 laptop from Best Buy as it does on a fully tricked out MacPro Tower. Just another way we can save our users a few dollars.

Also cloud sharing. All the Google Drive file sharing tools work for Drafty. Make a pre-plot and share with your assistant to finish off the data entry. Share the plot with your electricians and let them enter all the dimming and circuit information. No more "Passing the football." You just work.

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Thanks for reading. If you like what you're reading, please share it with a friend and follow my blog. In part 2, we will be talking with Lucas about paperwork, signal flow, and importing from other CAD programs. There's also news about Drafty's new partnership with Team Sound (https://jeromyhopgood.wordpress.com/2015/08/27/indespinsable-products-go-box/) and Field Template (http://www.fieldtemplate.com) for high quality CAD symbols available through Drafty as in-app purchases. See you then.