

I build to understand. Including the tutor I now learn from.

Twenty nine, based in Reading. Nine years of working relationships with Chinese manufacturing and thirteen years self employed before returning to formal education. I work across physical product, fabrication and software: I specify systems, direct their build, and take them from concept to a sellable object.

Bennett Anthony William Harris

Systems artist and designer · product, fabrication and machine intelligence

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Eight projects, each one live and checkable.

Nothing in this pack is described as finished unless it is finished. Every project names a working page, so anything here can be opened and checked rather than taken on trust.

The whole portfolio is also narrated. Open bawh.io, press play with the sound on, and Grant, the briefing agent on page four, will read the work to you in its own voice. That is the shortest demonstration I can give of what I actually build.

What I want you to weigh

The current work, not the age of the qualification record. Everything here was made before dyslexia was diagnosed in May 2026 and before any support was in place.

How it is organised

Machine intelligence first, then hardware, then manufacture, then the drawing sets and the workshop, because that is the order in which the work actually happens.

How to check it

Every URL in the right hand column is live now. The drawings, the hardware and the source are all available, and I will bring any of it to an interview.

What is not here

Anything unfinished is labelled unfinished. Nothing in this pack is a concept render standing in for an object that does not exist.



Pillow Perch, first year. Designed, built, upholstered and sat on.

THE WORK

01	Neuro Locker	An audio first AI tutor I built for the way I learn	neuro.locker
02	Grant 3.0	Private briefing agent, and the voice of this site	grant.bawh.io
03	Private Inferencing Core	Owned machine intelligence infrastructure	pic.bawh.io
04	Project Palma	Seventeen degree of freedom tendon driven hand	palma.bawh.io
05	KIJIO	Twelve years of design for manufacture, Shenzhen	kijio.bawh.io
06	Technical Design Communication	Fusion 360 mechanism study, drawn to standard	lsbu.bawh.io
07	1D Mini	A complete video game on a single line of LEDs	1d.bawh.io
08	Container Studio	A shipping container turned into a working studio	23.bawh.io

Neuro Locker

Beta, in use · neuro.locker

An audio first tutor for neurodivergent learners. It takes course material and presents it in the format my assessment says I actually learn from: spoken rather than read, then taught through interactive cards. I designed it, built it and shipped it, and I learn from it every week.

Why it exists

I was formally assessed as dyslexic in May 2026, at twenty nine, after a lifetime of assuming I was simply slow at reading. The report told me what I had always suspected.

Rather than wait for the sector to accommodate me, I built the accommodation. The gap was never comprehension. It was the channel the material arrived through.

How I built it

I specified the system, wrote the prompt architecture, built the front end and deployed it. It is live and in beta, and it runs on my own engineering physics material every week.

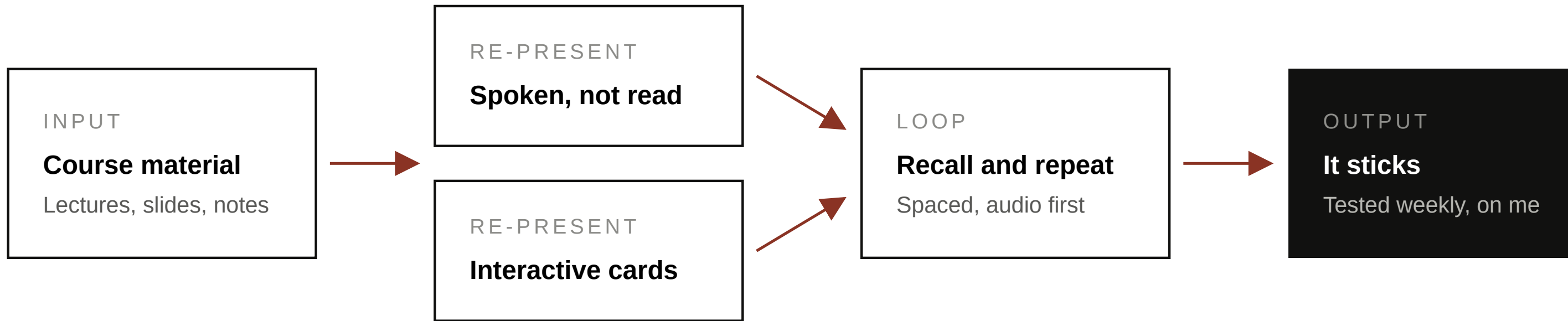
It is the clearest example I can give of how I work: identify the constraint, specify the system, build it, then use it in anger and fix what breaks. The same method I apply to a moulded part or a tendon routed hand.

Why it matters for a course

If I am admitted with dyslexia confirmed and a Disabled Students' Allowance in place, I do not arrive needing a department to invent a way for me to learn. I arrive with one already running.

I would rather build the instrument than keep complaining about the acoustics.

HOW IT WORKS



System diagram. Course material in, audio and interactive cards out, recall tested on a loop. Built, deployed and in use at neuro.locker.

What exists today

A working beta at neuro.locker with a voice, a card engine and a spaced recall loop, running on my own engineering physics material.

What it taught me

That the interesting engineering is not the model. It is the loop around it: what you feed it, what you keep, and how you test whether any of it stuck.

What comes next

Opening it to other students on the same course, and measuring recall properly rather than trusting my own impression of whether it works.

Grant 3.0

Working, conversational layer in development · grant.bawh.io



The voice layer. Grant narrates every page of bawh.io end to end.

A private briefing agent that turns scattered information into one focused daily brief, working plan and personal learning system.

It tracks my projects alongside my reading and shifting world conditions, and it decides what I need to know today rather than handing me a search box.

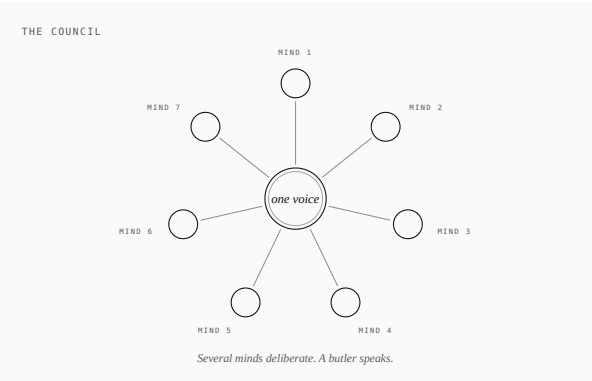
The brief is the product. Anything can retrieve; the difficult part is judging what is worth my attention this morning and saying it in fifteen lines instead of fifty.

Three generations now, each rebuilt from what the last one got wrong. Version one was a gift for my younger brother. Version two joined itself to my study routine. Version three speaks.

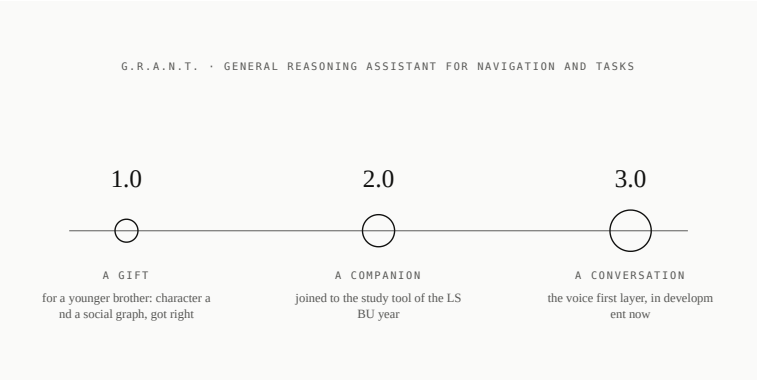
Under the hood several models deliberate and one voice answers, which is the part I care about: an orchestration problem, not a prompt.

Grant also narrates bawh.io end to end, which is the demonstration I would rather give than describe. The whole portfolio has a voice, and the voice is a system I built.

Press play on bawh.io and you are listening to it.



Orchestration. Several minds deliberate, a butler speaks.



Three generations, each rebuilt from what the last got wrong.

Every morning

One brief. Projects, deadlines, reading and the two or three things in the world that actually change what I should do today.

What it runs on

The Private Inferencing Core on the next page. Owned hardware, resident models, nothing sensitive leaving the building.

What it narrates

Every page of bawh.io, end to end, in a synthesised voice I built the pipeline for. Press play and you are hearing the system, not a recording of me.

Where it goes

A conversational layer, so the brief can be argued with rather than only read. That is the version currently in development.

Private Inferencing Core

In development, working core · pic.bawh.io



The working core. Apple silicon on a custom articulated mount, holding models resident and answering locally.

A personally owned machine intelligence infrastructure project, built to keep data, memory and inference under local control rather than rented from a provider.

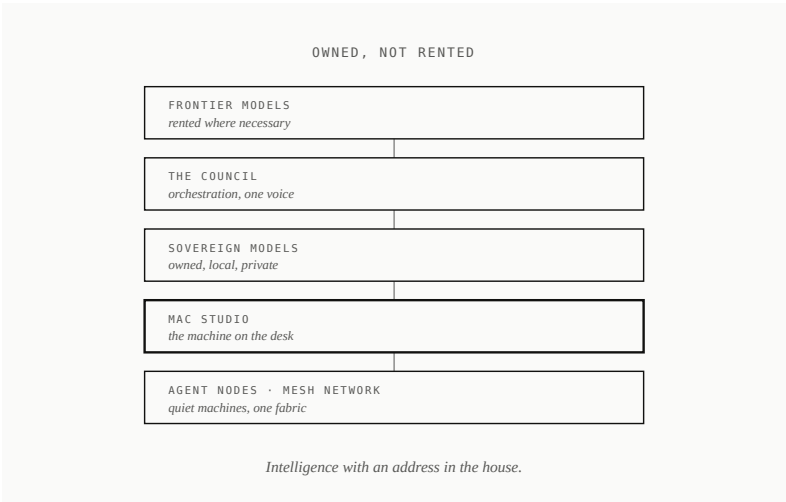
The argument is watts per gigabyte of resident model. Unified memory architecture lets a single low draw machine hold a large model resident and answer instantly, where the discrete GPU workstation alternative costs several times as much to buy and an order of magnitude more to run continuously. I costed both properly before committing, and the numbers decided it rather than the enthusiasm.

It is also the only way the volume of inference my working method needs is affordable on a student budget. Renting it by the token, at the rate I use it, is not.

Owned, not rented

Grant, Neuro Locker, my assessment material, my coursework and my clients' drawings all pass through this core. Local ownership matters to me well beyond the engineering.

The proposed expansion is a small clustered rack with local storage and a mesh of quiet agent nodes, so that everything I make and everything I learn stays in a system I own rather than one I rent by the month.



Intelligence with an address in the house

Frontier models are rented only where they are genuinely better. Orchestration, the sovereign models and everything they touch stay on hardware I own, on a desk I can see. That is a design decision about privacy and cost, and I can defend both halves of it with numbers.

Project Palma

In development, first build under way · palma.bawh.io

The open source ORCA hand as a base, running new models on it. Seventeen degrees of freedom, tendon driven, fully printable.

I stay close to robotics by owning a piece of it. Printing every component, assembling it, tensioning the tendons, and finding out what it actually takes to make a machine hand do something useful.

Reading about manipulation is not the same as discovering that a tendon route binds at forty degrees. The parts are printed, the base is assembled, and the first grasp trials are the next milestone.

Bill of materials under 2,000 CHF, which is the point: it keeps embodied machine intelligence inside a student budget.

The control side is where my software work and my hardware work meet, which is the reason this project sits next to Neuro Locker and Grant in the same pack rather than in a different one.

A hand is only a hand until something decides what to do with it. That is the part I am building towards.

Built, not bought

Every component printed, sorted and assembled by me. Owning the build is how I learn what the drawing does not say.

Why ORCA

Open source, fully printable and properly documented, so the money goes into iteration rather than into a licence.

Next milestone

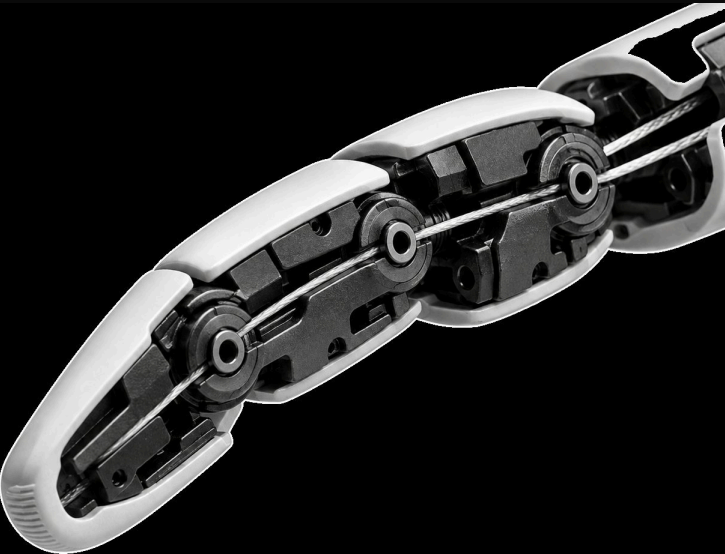
Tendon tensioning finished, then first grasp trials against known objects, then a control layer of my own.

What it costs

Under 2,000 CHF in parts. Embodied machine intelligence, at a price a student can actually reach.



Assembled base configuration. Seventeen degrees of freedom, tendon driven, printed in full.



Finger linkage. Tendon routing and joint stack.



Full hand, printed and assembled, on the actuator base.

KIJIO

Manufacturing and development agreements signed, August 2026 · kijio.bawh.io

A twelve year venture developing mobility products, deployable infrastructure and manufacturing relationships, taken from design through tooling to certified manufacture with factory partners in Shenzhen.

This is where I learned design for manufacture properly: draft angles, tolerance stack, tool life, the difference between a part that models well and a part that moulds well. It is also where I learned what a compliance standard actually costs to meet, and how to hold a supplier to one.

The current product is a multi region power and charging system, certified and CE marked, with the tooling conversation closed and agreements signed in August 2026.

I am not describing a college brief. I am describing a supply chain I built myself, over more than a decade, that can take a design I make this year and put it on a shelf next year.



Production design. Certified, CE marked, tooling agreed.



Interface detail. Multi region, multi standard, one housing.

NINE YEARS OF FACTORY FLOORS

2017

First visit to Shenzhen. Factory relationships direct from the second trip onwards.

9

Years of going back, across the whole of my working life so far.

12

Supplier meetings on the most recent trip, twelve days in August 2026.

6

Factory tours on that same trip, walking live production lines.

Not one trip. A working relationship with Chinese manufacturing, built visit by visit since 2017, and still running.



Technical Design Communication

Submitted complete and on time, July 2026 · lsbu.bawh.io

A Fusion 360 mechanism study: a wheeled case with custom wheel, badge and handle components, and a telescoping handle constrained to twenty five millimetres of controlled travel.

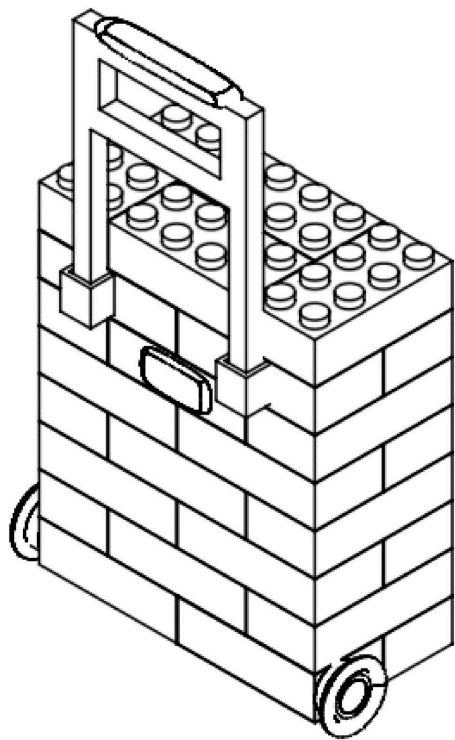
Every part dimensioned in millimetres, with an exploded assembly drawing, an eight step build manual, a physical mock up and a motion demonstration.

Produced under a formal brief, to a deadline, to a drawing standard, and finished.

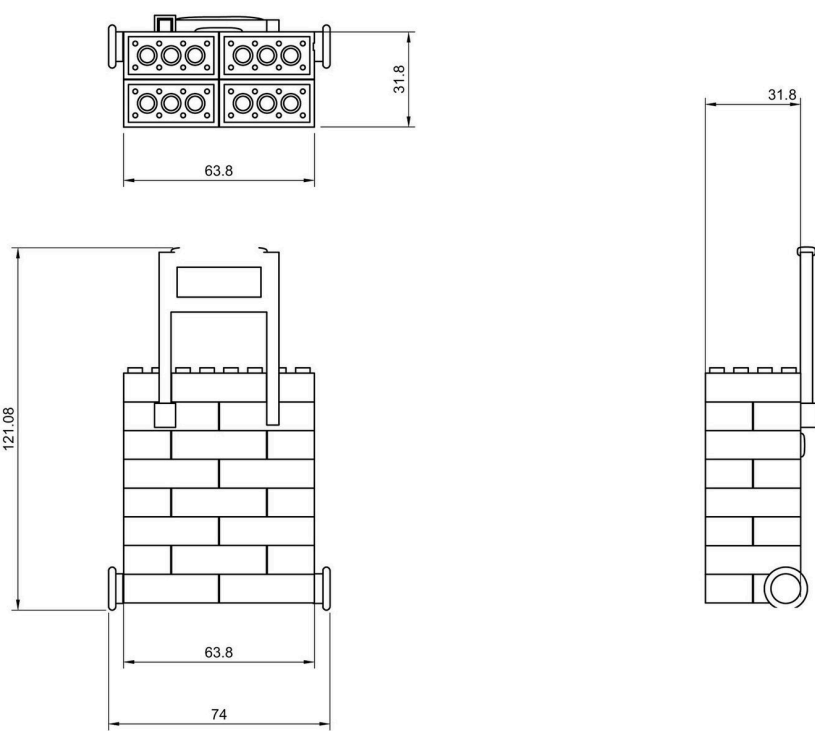
This is the piece I would point an admissions tutor at first if they wanted to see whether I can draw to standard.

What is in the set

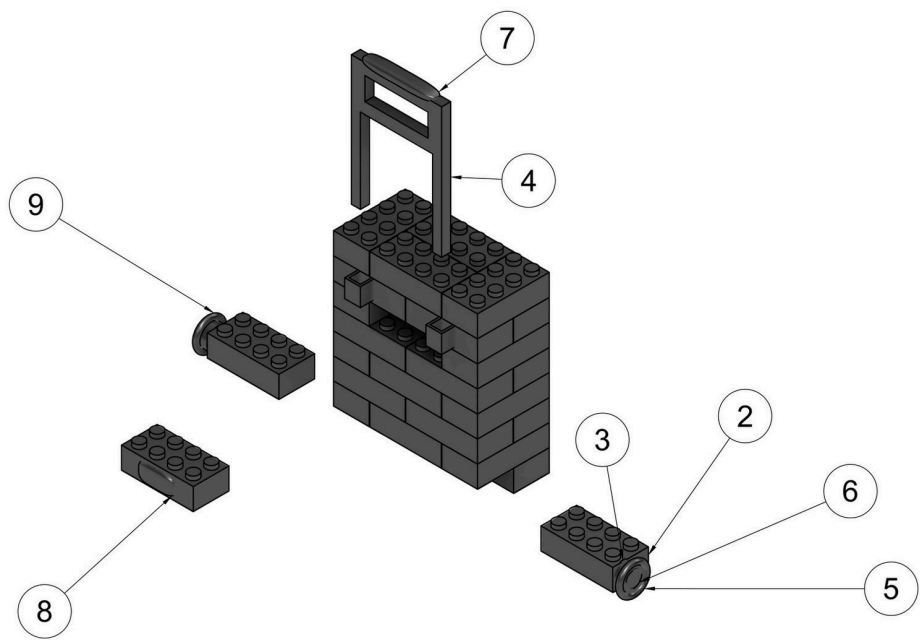
Full assembly and part models · orthographic sheets with complete dimensioning · exploded view with numbered callouts and a parts list · an eight step assembly manual drawn as a build sequence · a physical mock up · a motion study of the handle travel.



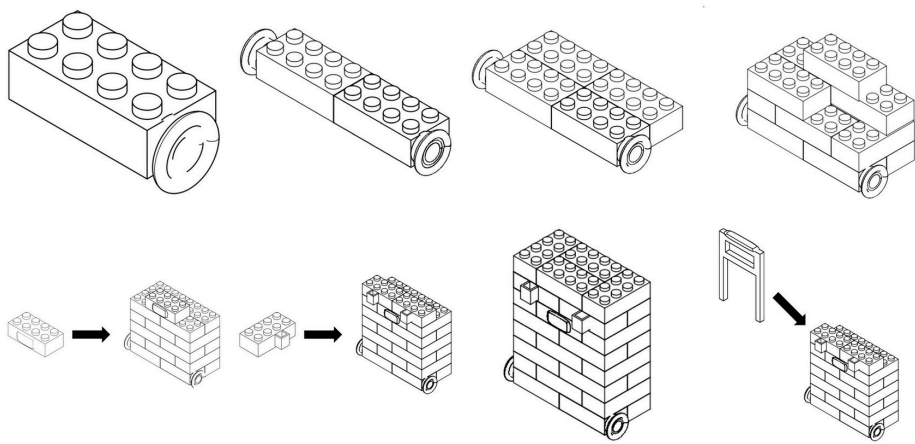
Isometric assembly. Custom wheel, badge and telescoping handle.



Dimensioned orthographic set. Every feature in millimetres.



Exploded view with numbered part callouts.



Eight step assembly manual, drawn as a build sequence.

1D Mini

Completed · 1d.bawh.io

A complete video game constrained to a single line of LEDs.

Addressable strip, microcontroller and a hand cut acrylic wedge, with game behaviour iterated directly on the hardware rather than in simulation. The constraint was the whole point: one dimension, one strip, no screen. Everything the player needs to understand has to be carried by position, colour and timing.

I cut and polished the wedge, soldered the strip, wrote the firmware and rewrote the difficulty curve perhaps a dozen times with the object in my hand.

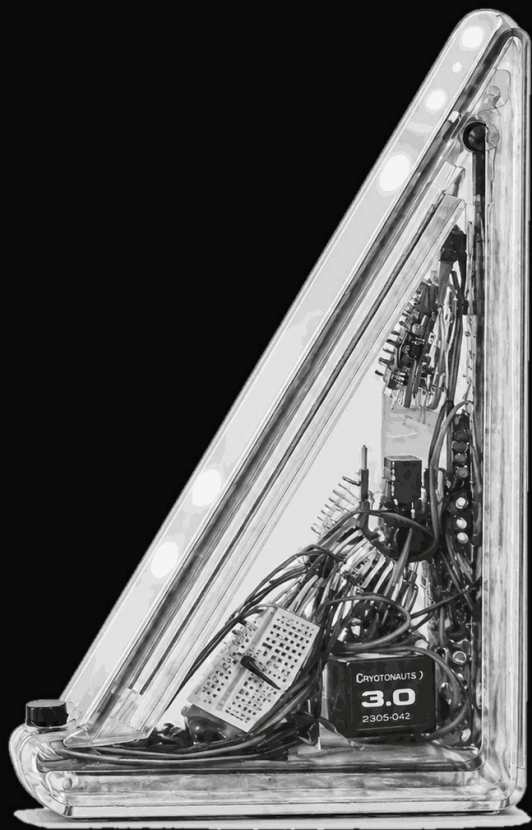
It works. People play it. They keep playing it.

The constraint

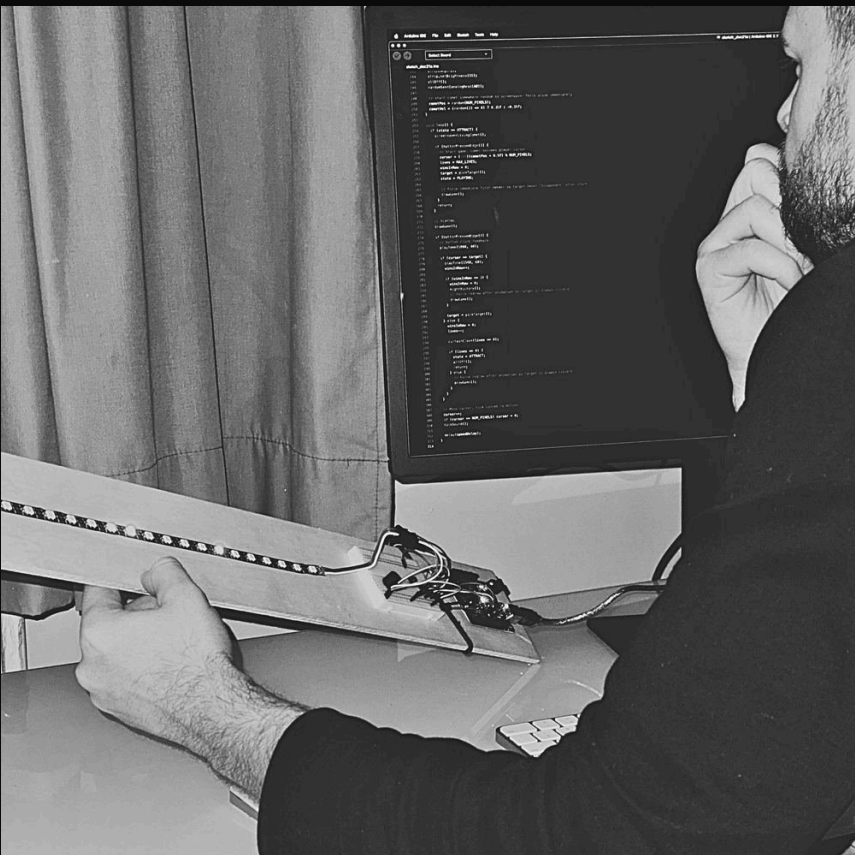
One dimension, one strip, no screen. Everything the player needs has to arrive as position, colour and timing, which is a far harder brief than a display.

What I made

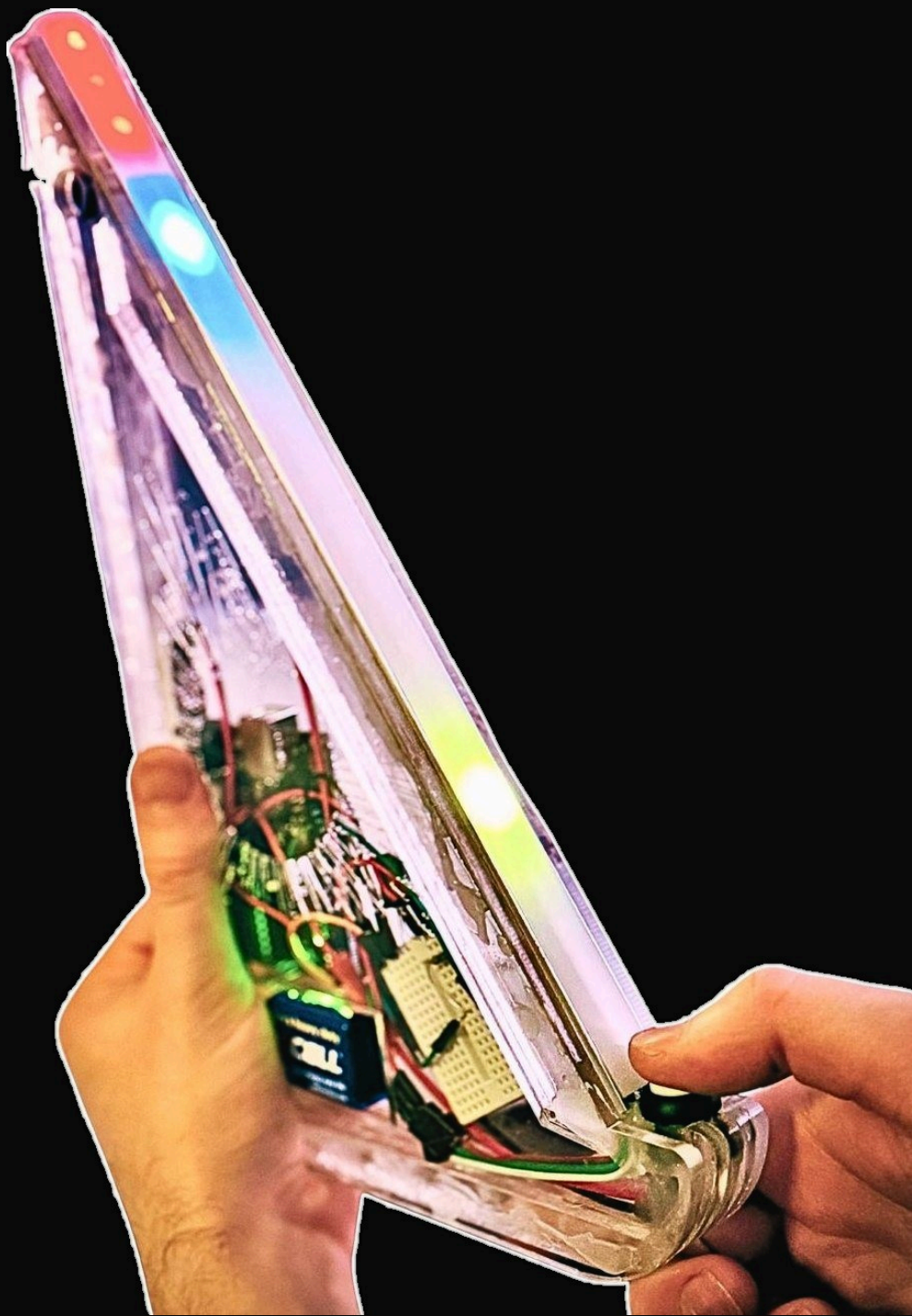
Cut and polished the wedge, soldered the strip, wrote the firmware, and rewrote the difficulty curve with the object in my hand rather than in a simulator.



Acrylic wedge, hand cut and polished. Every component visible through it.



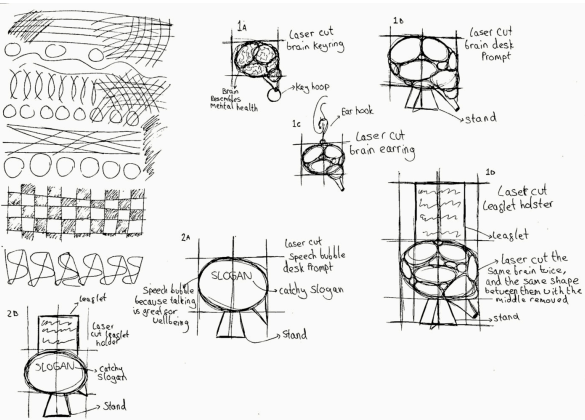
Firmware iteration on the bench.



The finished object, lit and in play. One strip, one dimension, no screen, and every component visible through the wedge because there is nowhere to hide it.

Making, in the room

Sketching, laser cutting, soldering, upholstery, metal and timber. I am a workshop person before I am anything else, and everything on the previous pages started on paper and ended on a bench.



Development sketch sheet. Thinking on paper first.



SIK Display. Laser cut acrylic, DXF prepared from scratch.



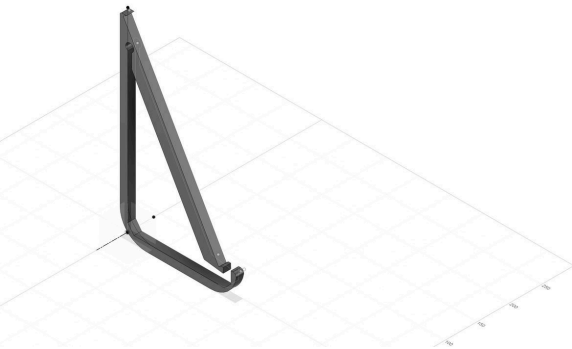
Pillow Perch. Timber frame, upholstered seat, built and tested.



Studio session. Working a brief out with the cohort.



Bench work. Assembly and finishing by hand.



Bracket study. Load path and fixing detail.



The range in one frame: timber and upholstery, laser cut ply, microcontroller and servo, formed sheet metal, and a geared mechanism. Different materials, one method.

I do not separate the digital work from the physical work, because the same discipline runs through both. Specify it properly, build it, then find out what you got wrong by using it.

Container Studio

In development, working environment · 23.bawh.io

A shipping container converted into a working studio, office and fabrication space. Real structure, real services, built rather than rendered.

It is where most of the work in this pack now happens. Steel shell, insulated and ply lined, power and lighting run properly, with a CAD station at one end and a bench at the other so the drawing and the object never get more than three metres apart.

The point of building it was independence. I did not want to be a student who can only make things between nine and five in someone else's workshop, and I did not want the studying to stop when the building closed.

It is also the reason the rest of this pack exists. The hand, the wedge, the drawings and the software all came out of a space I built first, on the principle that if you want to make things properly you start by making somewhere to make them.

What is in it

Bench and vice, CNC, pillar drill, tool wall, electronics station, drawer storage, and a CAD station wired into the Private Inferencing Core.

Why it matters

Workshop, storage, energy and signal in one box I own. An institution the size of a container, available at four in the morning.



Stated plainly.

CAPABILITY INDEX

Building software end to end	Neuro Locker, an audio first tutor in beta	neuro.locker
Agentic and generative AI systems	Grant 3.0, briefing agent and site narrator	grant.bawh.io
Machine intelligence infrastructure	Private Inferencing Core, costed and running	pic.bawh.io
CAD modelling and engineering drawing	Technical Design Communication, drawn to standard	lsbu.bawh.io
Assembly and manufacturing documentation	Exploded assembly and eight step build manual	lsbu.bawh.io
Additive manufacture, print and assembly	Project Palma, ORCA hand	palma.bawh.io
Electronics, soldering, physical computing	1D Mini	1d.bawh.io
Laser cutting and DXF preparation	SIK Display	lsbu.bawh.io
Fabrication and workshop build	Container Studio	23.bawh.io
Design for manufacture and tolerance	KIJIO, tooling and certification	kijio.bawh.io
Supplier and certification negotiation	KIJIO, twelve days in Shenzhen, August 2026	kijio.bawh.io
Full stack web systems, specified and deployed	bawh.io and every subdomain in this pack	bawh.io

Qualifications	Cambridge IGCSE, 2012, sat privately aged fifteen. Mathematics C, English Literature C, First Language English E. No Level 3 qualification.
Higher education	2025/26, Year 1 of BSc (Hons) Product Design and Technology at London South Bank University, admitted as a mature student. Teaching year completed. The resit examination board sits at the end of August 2026.
Support	Formally assessed in May 2026. Dyslexia confirmed, ADHD symptoms documented, clinical assessment under way. Disabled Students' Allowance is in progress for the coming year, so support will be in place from week one rather than half way through it.
Funding	Self funded through a licensed private hire operation run alongside study. Student finance entitlement confirmed for the full remaining course length.

What I am asking for

Judge the current work rather than the age of the qualification record. Everything in this pack was made before any of it was diagnosed or supported. I build the tools I need, I finish what I start, and I would rather be judged on what I can make.

I am happy to come in at short notice, bring the drawings and the hardware, and answer anything you want to ask about either. Everything here is live at bawh.io and narrated end to end.



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