

# Everything Unit

\*Developed using co-design methods by a cohort of designers, prisoners and staff at HMP Standford Hill

## Research and Co-Design



### Cell furniture is currently a 'one-size-fits-all' type of system

The furniture that prisoners get is akin to a 'one-size-fits-all' system. There is a range of cell furniture spanning metal and wood, but having a choice in the furniture they get is only an option for prisoners. Cell furniture is also, in many ways, a system of 'first come first serve', in that prisoners accumulate furniture by taking or stealing what is available at opportune moments. HMP guarantees prisoners items like a bed and chair, but many factors contribute to a lack of furniture items – like desks, cupboards and wardrobes – in cells. Factors contributing to a lack of furniture are:

- Furniture is broken or in poor condition.
- Prison industries cannot produce furniture quickly enough to keep up with the demand for cell furniture items.
- The scavenger mentality in the prison environment, where prisoners take furniture from other cells that they need or because the furniture is in better condition compared to what they have. This often happens when a cell is temporarily unoccupied, like when a prisoner transfers to a new cell or prison. The prisoner to move into this cell might not have much furniture at the start of his occupancy if the cell has been picked clean.

### Furniture needs and preferences are constantly changing

DAC learned from speaking with prisoners that furniture their furniture needs and preferences change often. One prisoner said that every few months he liked to rearrange his cell, sometimes getting rid of furniture to be more minimalist. He likened the experience to walking between rooms in your house where each room is a little different, but in prison you only have your cell, so you need to change it to keep it interesting and fresh.

During their sentences, prisoners engage in different types of purposeful activity like education, art, fitness, prayer and worship. Many of these things are done in the cell and they occur at different times – sometimes people have a heavy education workload demanding that they spend time studying and writing essays for their certification or degree. During these periods, prisoners need a desk, which they might not have given their cell or cellmate situation. In circumstances like these, prisoners might use cupboards or wardrobes as work surfaces. At other times, their desk-based activities or school workload might be minimal, during which time a desk is not a high priority. In this case, they might prefer to have storage, so they can have a tidier room and more space to work out.

The research showed the potential value of adaptable furniture.

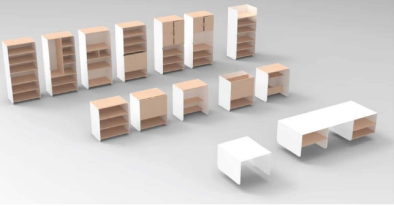
### The story behind the concept: What the prisoners came up with in co-design

In the co-design sessions at HMP Standford Hill, the participants followed a human-centred design methodology which entailed creating a set of user personas (or fictional characters that represented types of people one might find in prison) who they would then design for. The prisoner and staff participants then defined the furniture needs of these personas and came up with furniture ideas and rough prototypes that responded to these unique set of needs.

It was common that personas needed storage, workspace and floorspace, however, a crowded cell makes it difficult to accommodate all of these. The co-design participants developed sketches, cardboard models and prototypes for a multi-functional storage and fold-down desk concept. When we put the prototypes in the cell and gave other prisoners, who were non-workshop participants, the opportunity to give feedback, people liked the versatility but many had issues with its practicality, noting that there was not a good place to hang clothes and that the fold-down desk didn't provide much leg room.

DAC went onto develop this concept into an adaptable and customisable furniture unit that would allow prisoners to safely modify their furniture to fit their changing needs and preferences.

## Everything Unit Proposal



### The Everything Unit: A 'One-Size-Does-All' System

The Everything Unit is a furniture product that does almost... everything. The current system of prison furniture is generally one-size-fits-all, however, the Everything Unit provides flexibility and opportunities for customisation. Instead of one-size-fits-all, it is one-size-does-all. The standard dimensions of the Everything Unit are designed to be the ideal size for desks, wardrobes and cupboards depending on the orientation and shelving arrangement. The figure above shows the wide-ranging possibilities for customising the Everything Unit.

The Everything Unit is essentially three (3) plastic panels joined together with plastic fasteners to create a frame into which lightweight material like fire-treated cardboard or fire-proof fibreboard can be cut to specific sizes and inserted to create shelves, work surfaces and dividers. Other lightweight materials, like fire-proof textiles (e.g. mattress cover material) can also be used as screens or covers to provide privacy and block out.

### How Manufacturing Methods Influence the Design

The method of fabrication dictates many design aspects. DAC considered different fabrication methods for the Everything Unit and concluded that injection moulding – which is already used by prison industries – produced the safest results based on our understanding of use, misuse and abuse of cell furniture.

Other manufacturing processes like rotational moulding produced interesting iterations of the Everything Unit, however, the designs using this method were deemed unsafe for the prison context. Hypothetically, rotational moulding could have produced the Everything Unit as one solid piece – imagine a big 'U' or 'C' shape – as opposed to three separate plastic panels created in an injection moulding process.

For prison application, single-piece products are desirable and practical because of their relative robustness. Likewise, they are more difficult to weaponise. But rotationally moulded objects are characteristically hollow (e.g. water tanks, plastic ice coolers and kayaks). In prison, hollow features are ideal spaces to conceal objects and DAC's interview with prison staff clearly showed that hiding spots pose major threats to their safety and make their jobs, like cell searches, much more difficult and dangerous. In light of these significant concerns, DAC scrapped the idea of rotationally moulding the Everything Unit as the final product would have essentially been a giant hiding spot.

DAC recommends using injection moulding for manufacturing the Everything Unit because it achieves a design that bears a high standard of safety, it allows for faster production rates and more consistent quality. Also prison industries has expertise with this method of fabrication.

## Everything Unit Components

### Primary Component: Plastic Panels

Three injection moulded plastic panels make up the main structure of the Everything Unit. The voronoi pattern serves as a necessary ribbing structure that provides rigidity and strength to the panels and provides an organic quality and soft aesthetic. If the rib structure had been a standard linear grid pattern, the aesthetic would have appeared cage-like, an aspect we founded undermining to wellbeing. The voronoi ribbing is an aesthetic choice that does not compromise the strength of the unit nor does it impact cost and feasibility of manufacture.

The panels are held together with plastic push-fasteners at engineered locations. These fasteners are designed to break before the panels, and can therefore be easily replaced so that furniture is serviceable in a short time. Additionally, the panels have vertical and horizontal channels to allow for shelving pieces to be slotted in, providing a simple way for prisoners to adapt the unit to their needs.



### Primary Component: Lightweight Shelves and Partitions

A lightweight and recyclable material, like fire-treated cardboard or fibreboard (same as the bulletin board in the cell) can be used for the shelves and dividers. The lightweight yet rigid material is not a high safety risk compared to current MDF doors and shelves on cell furniture items which can easily be used as weapons. Likewise, because the material is recyclable and relatively inexpensive, the cost of replacing damaged or worn-out selves would be feasible.

The material can be cut using a variety of methods, but CNC and die-cutting machines are efficient at cutting many components at a high rate in all variety of shapes. In theory, HMP could provide a kit of Everything Unit components to each prisoner consisting of the three panels and an assortment of shelves, which could then be arranged by the prisoner in a customisable way based on their preferences and needs.



### Secondary Components: Fabric 'Door' Covering

In the cell environment, furniture doors or the ability to cover belongings is important for privacy and mitigation. The problem is that often times furniture doesn't have doors because they are difficult to repair or replace. Doors, unfortunately, can also be used as weapons. Fabric doors would greatly improve safety and still provide privacy and limit dust getting into prisoners' stored belongings. The fabric could be fireproof vinyl similar to the mattress cover material and attached with velcro. Also, the fabric cover could come in a variety of colours, which could contribute to personalisation and improved wellbeing.

