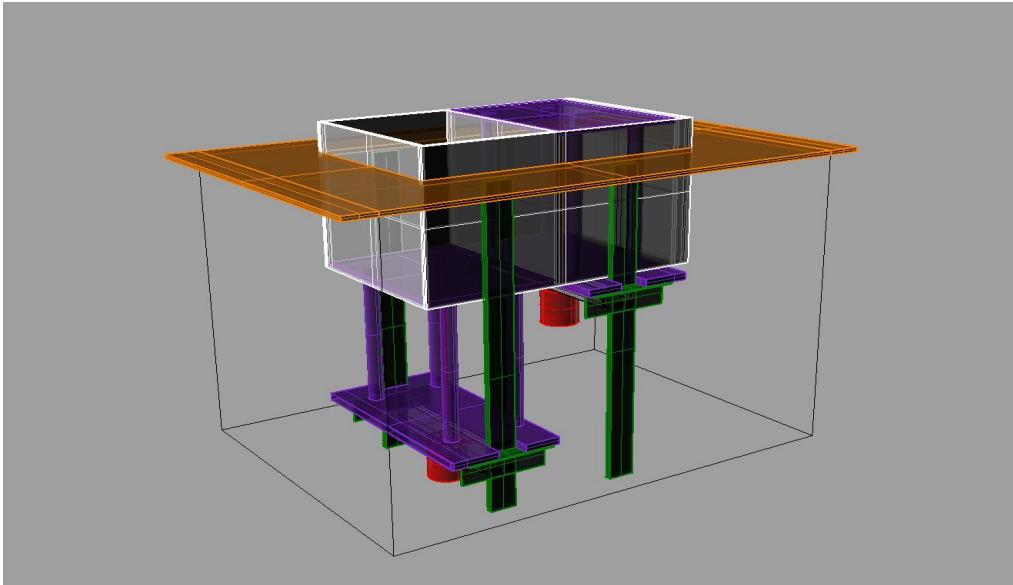


## A5 Powderbed printer



The purpose for the A5 Powderbed printer is for experimenters and hobbyist to try different powders, binders and fusion methods without fear of invalidating warranty on a commercial machine, it is also for artists to experiment with the materials and geometries available to digital creation.

With this in mind, the machine has been designed to be modular, that is to say, the powder bins are the heart of the machine, applying a thin layer of powder being a common task with a smoothing roller or blade.

Powderbed printers have some advantages and disadvantages, the main advantage is that the powder provides the support for the part whilst being built and they can be fast in comparison, colours are a possibility with appropriate software, the disadvantages are the mess they make, good housekeeping is essential, without fusion the parts are not regarded as engineering grade, however the parts can be used for moulding, infiltrated or other secondary operations.

The surface of the powder or, TOP of the machine, can be regarded as a separate entity, the place where binder is applied or fusion occurs, and different equipment can be installed, a plotter driven by EMC2 or Mach3, flatbed printer, plotter or galvanometer guided laser etc to name a few.

A hopper system to dispense powder has a space saving advantage, but may not be as flexible with various powders, needing the powder to be engineered to suit the hopper or the hopper to suit the powder, with this in mind the trusted method of feed bin and part bin have been adopted, although this is no guarantee that the powder will spread in a thin layer out of the bag without some additives or sieving, but should give the most flexibility to use different

powders.

The Powderbed printer has been designed to be built with minimum cost by someone with average workshop ability and tools, where the use of machines that may not be available to others in building the prototype, alternatives are suggested.