

Morphological Chart 1	
Task	Solution
Concrete Extrusion	Motorized auger pushes concrete through tube
Keeping Concrete at right moisture level	Mix concrete at the nozzle so curing before extrusion isn't a concern
Concrete Delivery	Dosing pump
Concrete Mixing	In Auger
Receive instructions for print	Transmit file via wifi
Motion in XYZ Axis	Using a motor, moving extruder along a threaded rod
Rational: Utilizing a auger system to extrude the concrete would allow for the concrete to be mixed within the extruder. Having the concrete mixed in the extruder removes the worry of wet concrete setting in the reservoir or delivery system limiting the clean up. A dosing roller pump would allow a controlled amount of dry concrete mixture to be moved into the extruder with very tight control as well as water ensuring the mixture is always at the right hydration. Motion of the extruder being controlled by threaded rods allows for the extruder motion to be very precise. Wifi uploading to the printer can aid in the printer's ease of use	

Morphological Chart 2
Task
Concrete Extrusion
Keeping Concrete at right moisture level
Concrete Delivery
Concrete Mixing
Receive instructions for print
Motion in XYZ Axis
Rational: Utilizing a auger system to extrude the concrete would allow for the concrete to be mixed within the extruder. Having the concrete mixed in the extruder removes the worry of wet concrete setting in the reservoir or delivery system limiting the clean up. A dosing roller pump would allow a controlled amount of dry concrete mixture to be moved into the extruder with very tight control as well as water ensuring the mixture is always at the right hydration. Motion of the extruder being controlled by threaded rods allows for the extruder motion to be very precise. Wifi uploading to the printer can aid in the printer's ease of use

ical Chart 2

Solution
Motorized auger pushes concrete through tube
Put a wet “curing blanket” over that top of the concrete in the reservoir to prevent it from curing too quickly
Gravity fed
User mixed in the reservoir
Transmit file via wifi
Using a motor, moving extruder along a threaded rod
er system to extrude the less liquid concrete mixture extruder reducing curing time e wet curing blanket gives a solution to keeping the in the reservoir. Utilizing te from the reservoir to the ify our design limiting the the design. Motion of the / threaded rods allows for te / precise. Wifi uploading to he printers ease of use