The following User Requirement Specification (URS) defines basis of the Fluor sponsored University design competition to develop an “international” production facility. Universities from around the globe have been invited to participate and are challenged to create a design solution for a simple, rapidly deployable, small scale manufacturing facility that can be shipped to any location in the world and assembled with minimal expertise.

- Kick-off Jan 2018 with Universities
- Feb - April Design work
- Design Submissions 25 May 2018

**BASIS**

The facility should be capable of being constructed off-site of connectable components and subsequently shipped to site for assembly.

The facility production area is to be designed as a “cleanroom production” facility with cleanable floors, walls and ceilings. The facility will be capable of a full wash down/ wipe down cleaning regimen to maintain a clean working environment to support the production of vaccines, micro-electronics, biologics, pharmaceuticals and other products that require a clean environment.

Utilities for support of production are to be considered for the facility. For the design competition, allowance of utility space and adjacency to the production space are to be considered. The utilities outlined in the URS are minimal and will be located in the allocated 500 M² clean utility room.

Support areas for Administration, Manufacturing Support and Shipping/Receiving are defined in the URS and are to be included in the design envelope. Adjacency to the production space should be considered for efficiency of operation.

Materials of construction can take any form and teams are encouraged to drive creative solutions. Fabrication of the facility components will take place off-site. Modularity, Pods, Inflatables and Origami design solutions (among others) are all design options. Shipment (Globally) and simplicity of assembly will be critical to design success.

Sustainability and Net Zero Energy consumption are encouraged and should be considered and captured where possible. They are not to be the central “drivers” to design success.

**URS**

Below is a listing of the User Requirements for the facility design:

1. Globally Transportable Facility Components
2. Globally Constructed – Simple Installation/Erection
3. Simple substructure system: Slab, Piers – Minimal underground (Drains, Piping, Electrical)
4. Repeated design components: Modules/Pods/Inflatable/Origami/Not-Traditional Materials
5. Free Standing/ Weather Proof Facility
6. Not: Box-in-a-Box design (facility inside a warehouse)
7. 2,500 M² of ‘Cleanroom’ Production Space – 5.5 m Ceiling
   a. Flat Floor, Single Open Space, Minimal Columns
   b. Cleanable wall, floor, ceiling surfaces
   c. Minimal Floor Drains/Penetrations
   d. Production Space Air Quality – ISO Grade 9
8. 500 M² of Administrative Space
   a. Entrance and Reception
   b. Bathrooms/Locker Room (transitions to production space)
   c. Offices
   d. Conference Room
9. 500 M² Utility Space adjacent to Production Space. Will support “Clean Utilities” Generation
   (Clean Water, Air, Gases) + HVAC Systems.
   a. Piping connections to the Production Space are not required for this design.
10. 250 M² of Receiving/Staging space for Materials (Just In Time (JIT))
    a. Roll-Up Door & Dock
    b. Storage of Raw Materials in Racks
    c. Storage of Final Product in Racks
11. 250 M² Manufacturing Support Room
    a. Physically attached to Production Space
    b. “Cleanroom” design with ISO 9 Air Classification
12. No Warehouse
13. No Laboratory
14. Automation Connectivity not to be considered
15. Fire Alarm/Fire Protection not to be considered
16. Sustainability is encouraged
17. Net Zero Energy Consumption is encouraged
18. Natural day-lighting is preferable
19. No plant utilities required (Steam, Chillers, Cooling Towers). It is assumed that these utilities
   along with Electrical Feed, Potable Water and Sewer will be supplied by the site
20. Wind and Seismic rated for Seismic Zone 4
21. Flammable and combustible materials will not be handled at this facility.
22. International Building Code (IBC) compatible
23. Suitable for one or more of the following industries:
   a. Pharma / Biologics
   b. Microelectronics
   c. Datacenters
   d. High Technology manufacturing (Carbon Fibre, Glass)