

FLEXIBILITY BY DESIGN

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ROBOTICS

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Collaborative robots – Cobots are the new black!

Cobots

• Can work in close proximity with people – no fence

Force limited

 Built-in force torque sensors that detect impact and abnormal forces, which stops the robot when overloaded

Ideas for use:

ISPE.

- Part assembly or pack of medicinal kits
- Small batch sizes







Modular - different definitions

Modular - Copy / Paste

• On-site construction, where same type of rooms are build as copies – same size and configuration

Modular - off site construction of building elements - LEGO concept

- A method of construction that utilizes off-site pre-engineered, pre-fabricated structures which are reassembled on-site.
- Up to 100% of the building and the equipment are already completed and pre-tested at the factory prior to shipping

Modular – PODular

• Full clean-room facilities built in a POD, including HVAC, air locks etc., which is build and qualified off-site. The POD's are then shipped to the site for the pharmaceutical production and connected to the stick built part of the facility



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Modular Engineering Modular Engineering let the process structure and Plants functionality be the guiding principles in the modularization not physical or construction considerations. In this way each module has a distinct function and clear **Process Module** interfaces to the surroundings. When it comes to the physical implementation of the Process Module the solutions are flexible: Pre-Assembled Units (PAU), Units skids or super-skids, building modules or stick built. The key is that we think, engineer, construct, qualify and **Equipment Module** document in a modular structure Components Ø nne[®] 38













THANK YOU



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