DesignSafe CI Design Modules **Archive** pre-process computing post-process tool tool 8 Staging 3 15 Repository 9 2 4 Inputs **Outputs** 5 Publication API 13 External **External Files** Repositories

1 Design document goes to staging area and to archiving (may not be used as an input, but wants to be archived)

Simulation

- 2 Design document retrieved from repository for modification or as a starting point
- 3 Design document goes to staging area (it will be used as an input)
- 4 A document from the staging area is pre-processed with some modules and it is used as an input
- 5 Simulation may happen inside of the CI. Modules may be available for running computations in the cloud
- 6 Simulation may happen outside of the CI
- 7 Inputs are transferred to where the simulation runs
- 8 A pre-process module is used to transform an input before feeding it to the simulation
- 9 A post-process module is used to transform outputs
- Outputs from the simulation are transferred back to CI
- An input file is created using a wrapped API from an external repository (see 14)
- 12 Multiple modules may be available for computation, processing, etc.
- 13 External files can be added at any stage
- 14 External sources can be wrapped in API's, automatically attaching provenance information
- Result is sent to be archived (and possibly tagged for publication)
- 16 Processes in staging can be iterated and inputs and results are kept version controlled