Installation Planning, Sustainability and Encroachment

Facility Composer

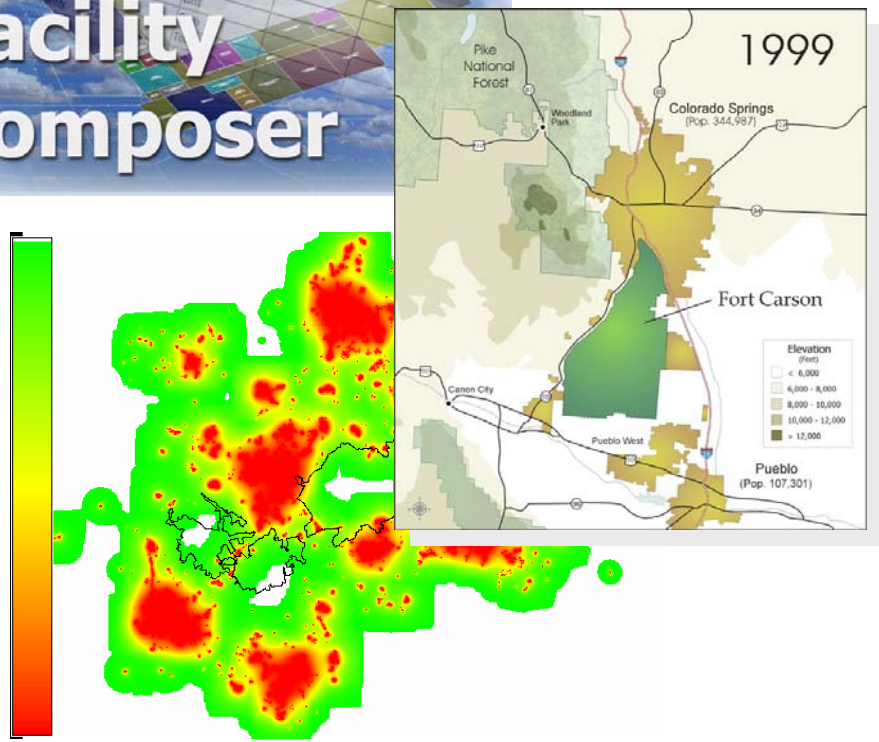
Modeling Standard Facility Criteria and Requirements

SIRRA

Sustainable Installations Regional Resource Assessment

LEAM

Predicting Loss of Installation Training Capacity



Design Criteria
Program
Properties
Architecture
Civil
Mechanical
Security
Electrical
Fire
Structural
Mechanical Criteria
Requirement
Value
UOM
Source
Comment
Cleanouts
Quantity
0
HVAC
AHU Quantity
Total
AHU Total Airflow
0.0
AHU Cooling
0.0
Total
AHU Heating
0.0
cfm
Boiler Quantity
0
tons
Facility
Composer
Planning Tools

Planning Charrettes

Memorandum from: Deputy Assistant Secretary of the Army (Installation and Housing) OASA (I&E)

Dated June 3, 2002

"Planning Charrettes are to be utilized for the preparation of documentation for all MCA projects starting with the FY07 program."

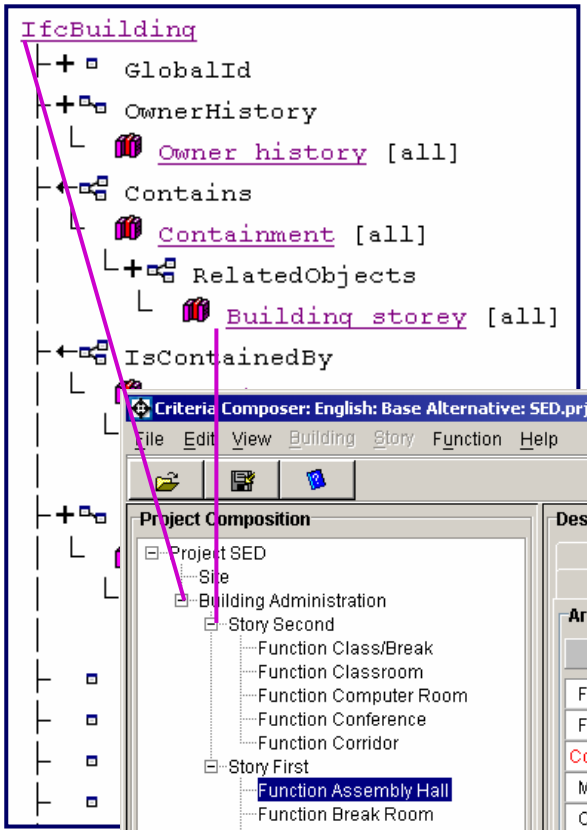
"The product of this effort should be an effective DD Form 1391 for programming, budgeting, designing, and constructing a quality, cost effective, facility for the Army."

Why Facility Composer?

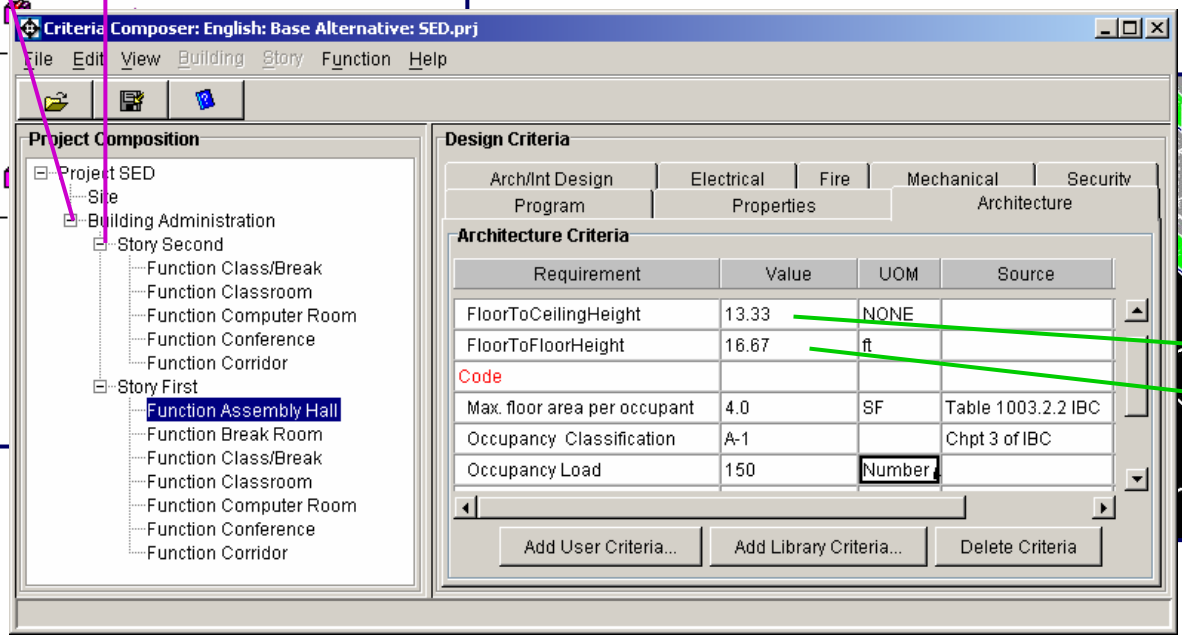
- Ensure DD1391 always starts with current and complete standard Army criteria and requirements
- Rapidly generate facility ‘architectural’ program, selected requirements, schematic layout, and programmatic cost estimate in support of planning charrette process
- Distribute building information in a computer-readable industry-standard format that can be exchanged electronically

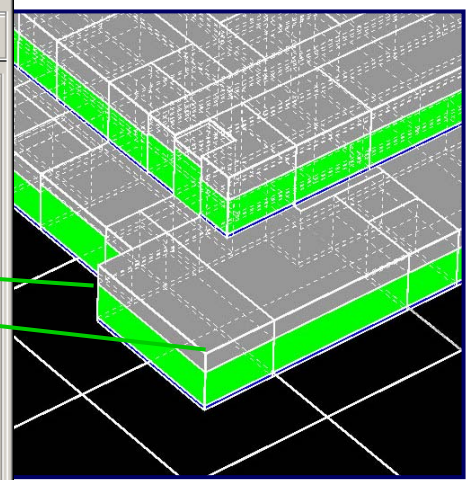
What is Facility Composer?

Modeling Standards (IAI)
Industry Foundation Class (IFC)



- Used to develop facility ‘architectural’ program during planning charrettes
- Manage standard facility criteria and requirements in a computable format
- Jump start IFC object model from facility standard criteria and requirements

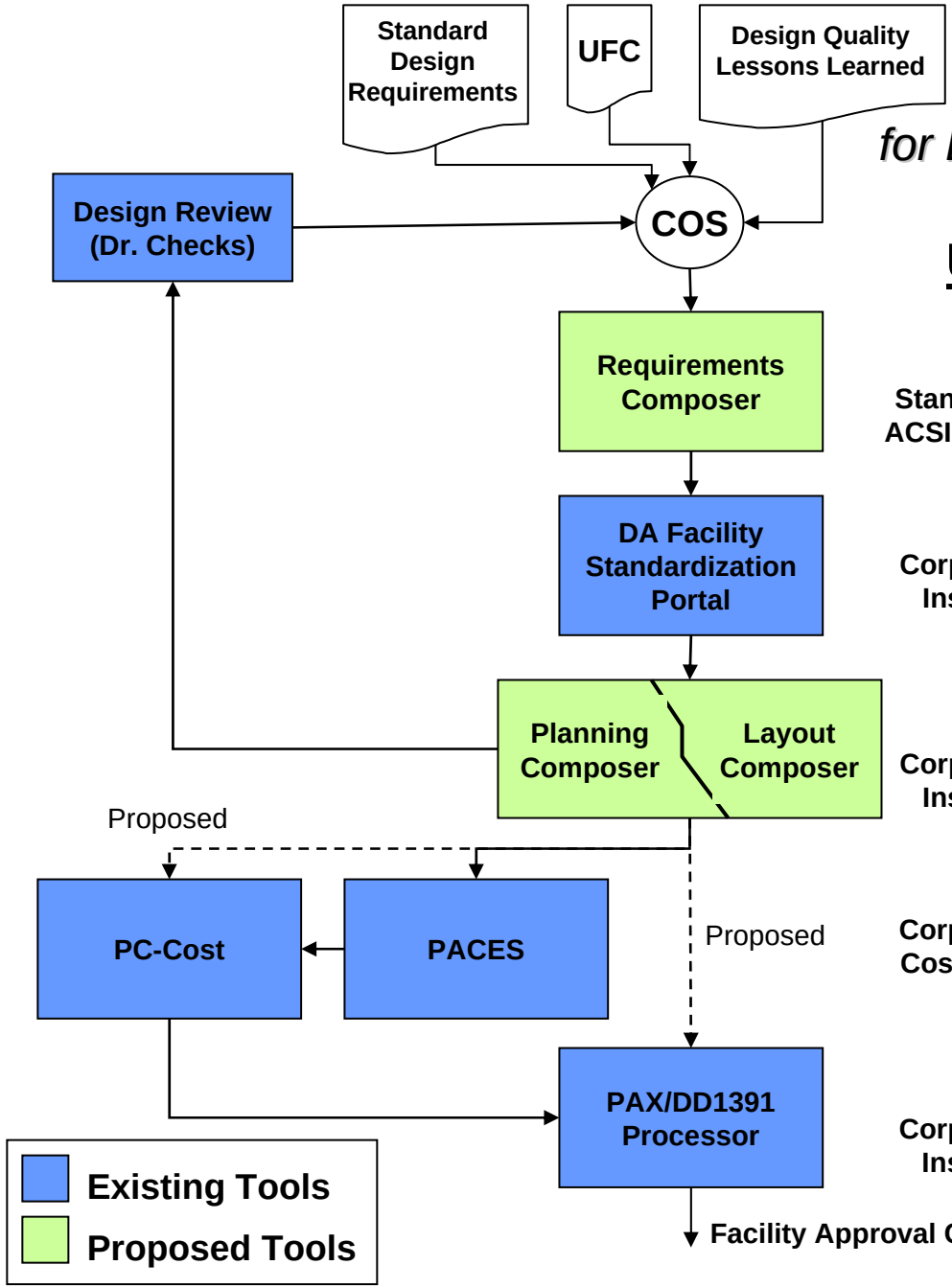




3D Mass Model

Envisioned Process

for Distribution and Use of Standards in Planning Charrettes



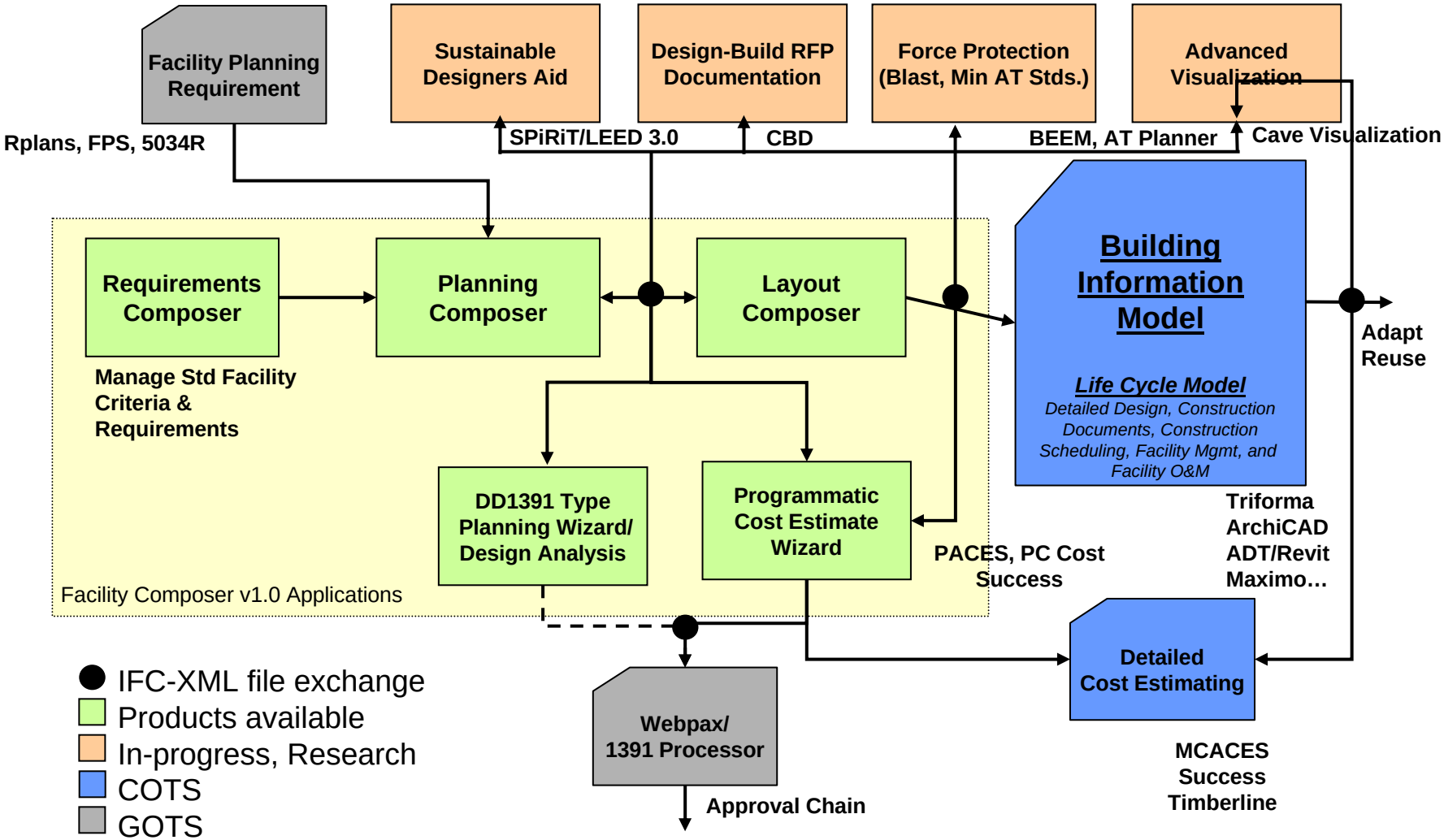
User	Purpose of Tool(s)
Centers Of Standardization, ACSIM/HQUSACE	Web-based development of facility standard criteria, requirements and layout
Corps Districts, Installations	Distribution of facility standard criteria, requirements and layout
Corps Districts, Installations	Used during Planning Charrettes to determine project specific criteria, requirements, and layout
Corps Districts, Cost Engineers	Generate parametric and/or programmatic cost estimates
Corps Districts, Installations	Send data to DD1391 Form or ENG3086 Form

Benefits

- Ensures standard criteria/requirements are basis of all facility designs
- Criteria updates published instantly
- Consistent DD1391s *(Credibility with Congress)*
- Capture facility requirements for Future Combat System(s)
- Rapidly generate DD1391s from pre-existing standard facility models for BRAC and/or other large force changes
- Reliable incorporation of lessons-learned
- Automated generation of programmatic cost estimate
- Consistent data exchange promotes virtual teaming

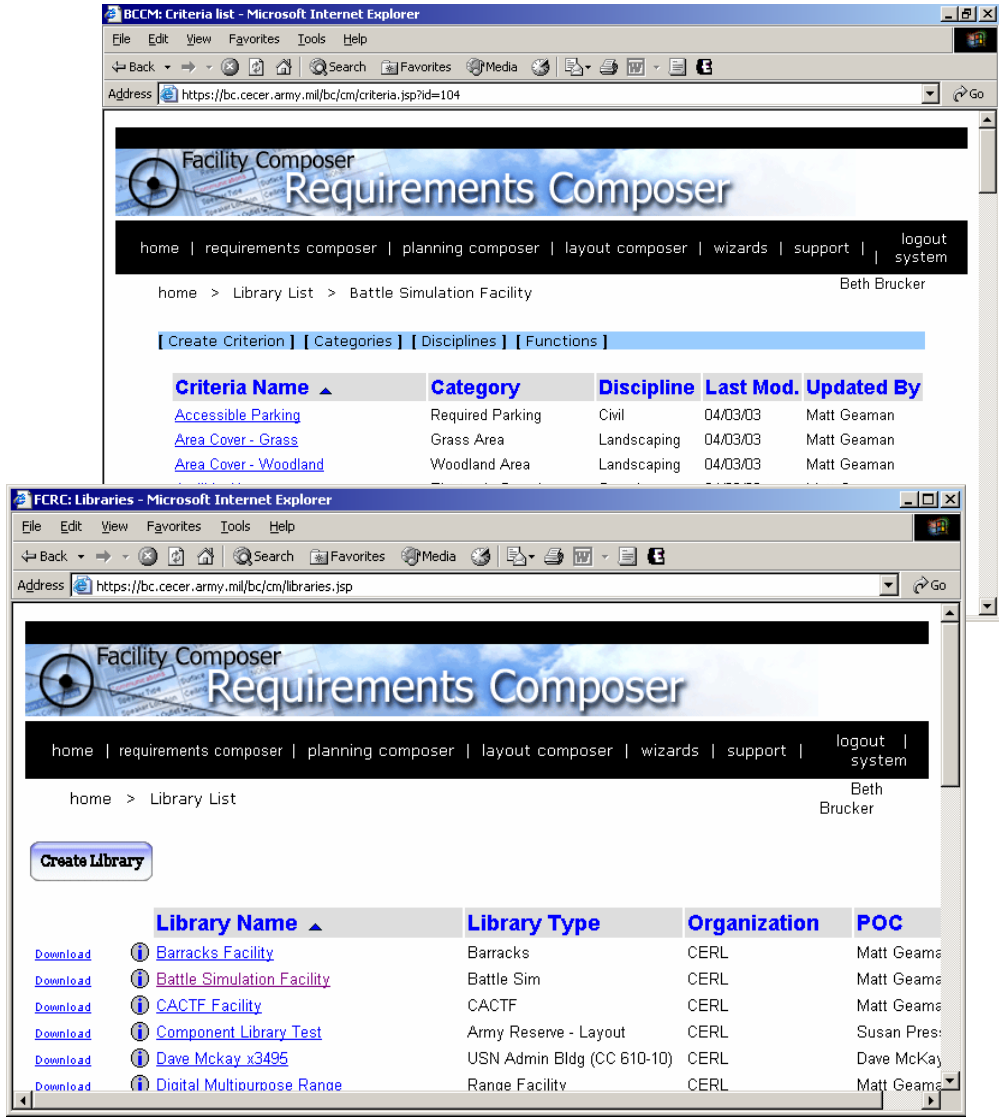
Facility Modeling Process

the technology behind the tools



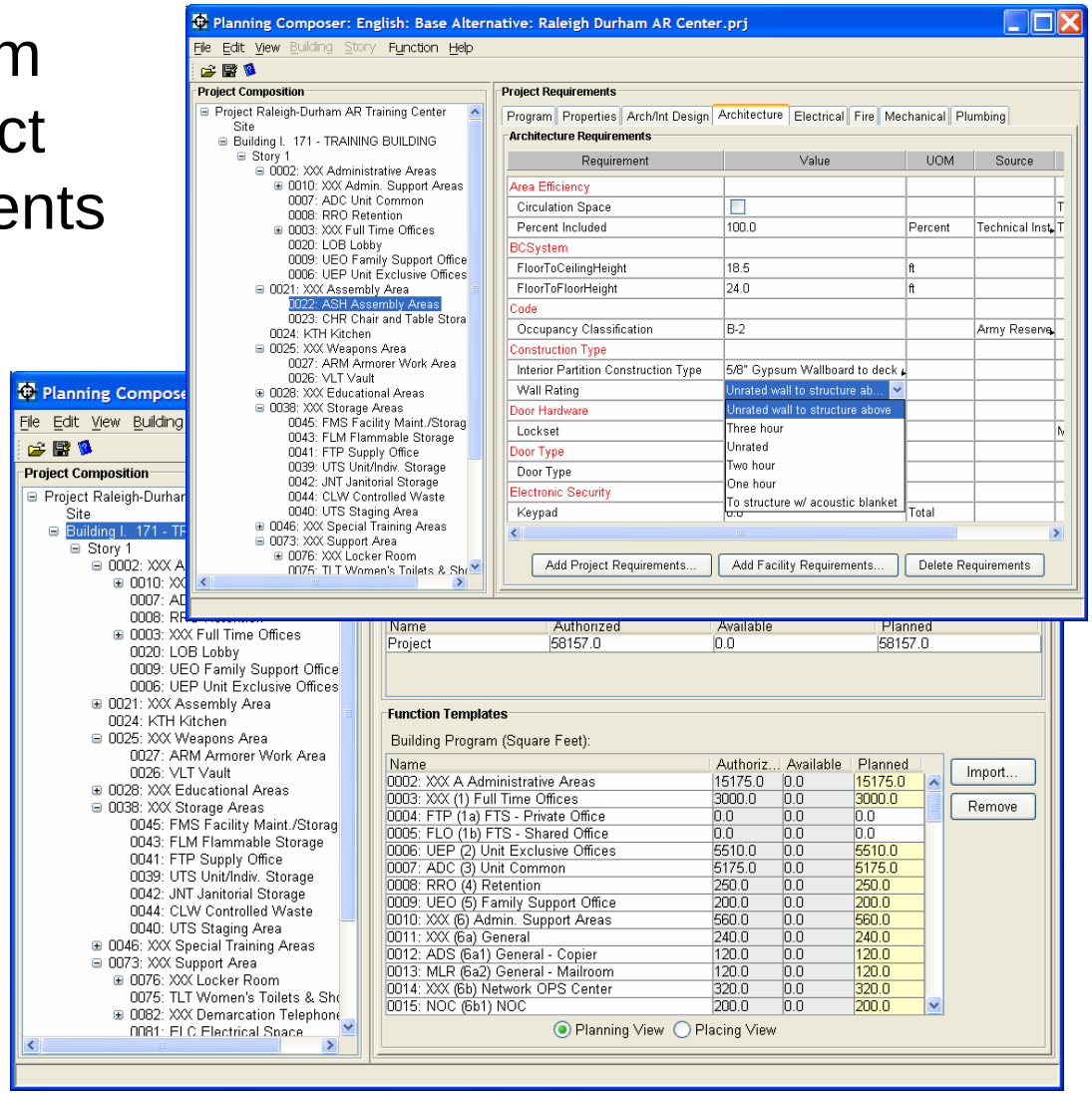
Requirements Composer

- Web-based repository for facility standard requirements and criteria
- Links requirements and criteria to project, building, story, function, and space
- Outputs XML library for use in developing facility ‘architectural’ program
- Provides permission based access controls



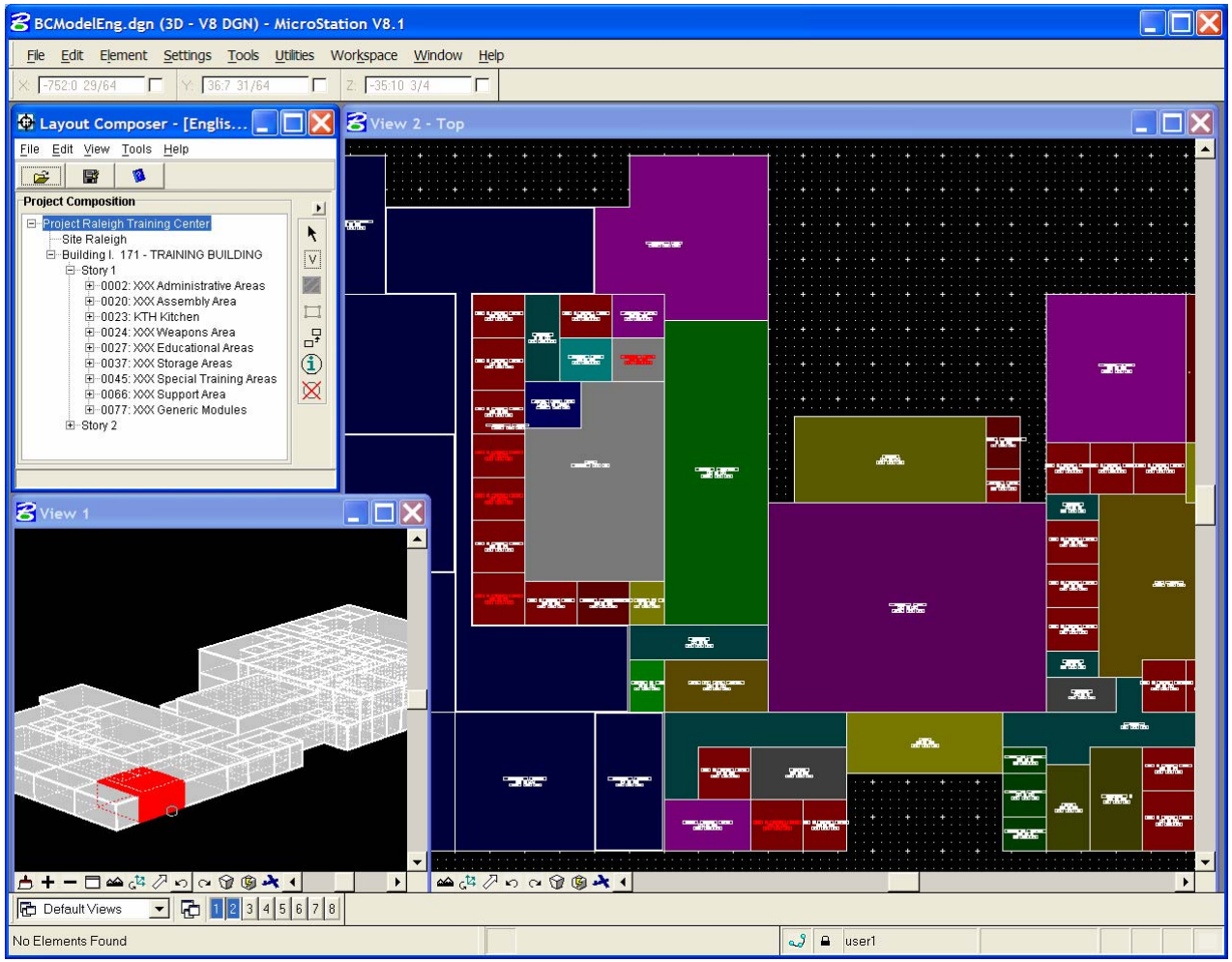
Planning Composer

- Create facility program with associated project criteria and requirements
- Creates (jump starts) IFC model from standard Army criteria and requirements
- Standard modeling format: starting place for COTS analysis tools



Layout Composer

- Generates IFC model to meet facility criteria/requirements
- Layout of alternative design solutions
- Supports multiple view representations for design analysis

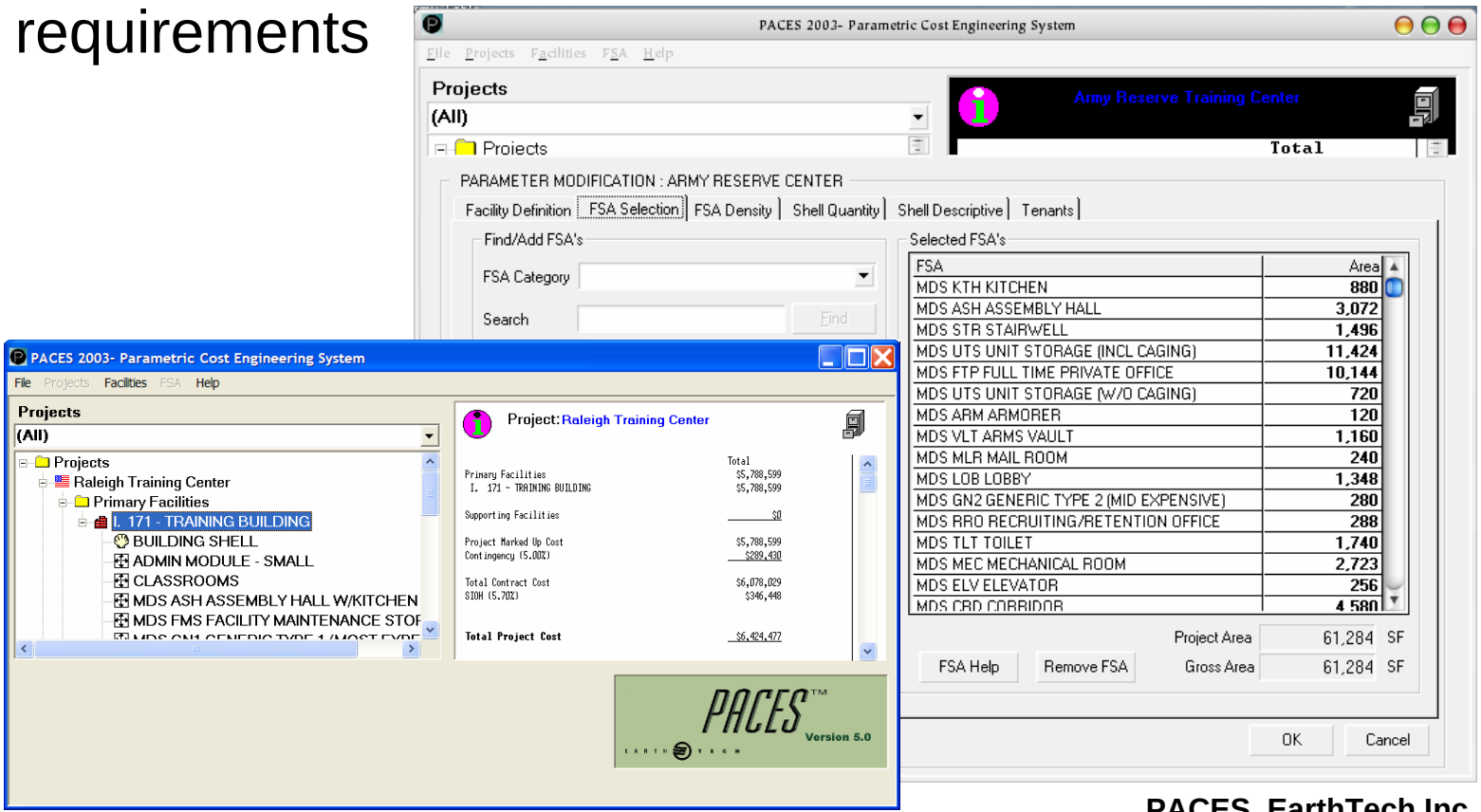


(color by function, mass modeling/ blocking/stacking, bubble diagramming)

PACES

Parametric/Programmatic Cost Analysis

- IFC import provides rapid parametric programmatic cost estimate based on facility criteria and requirements

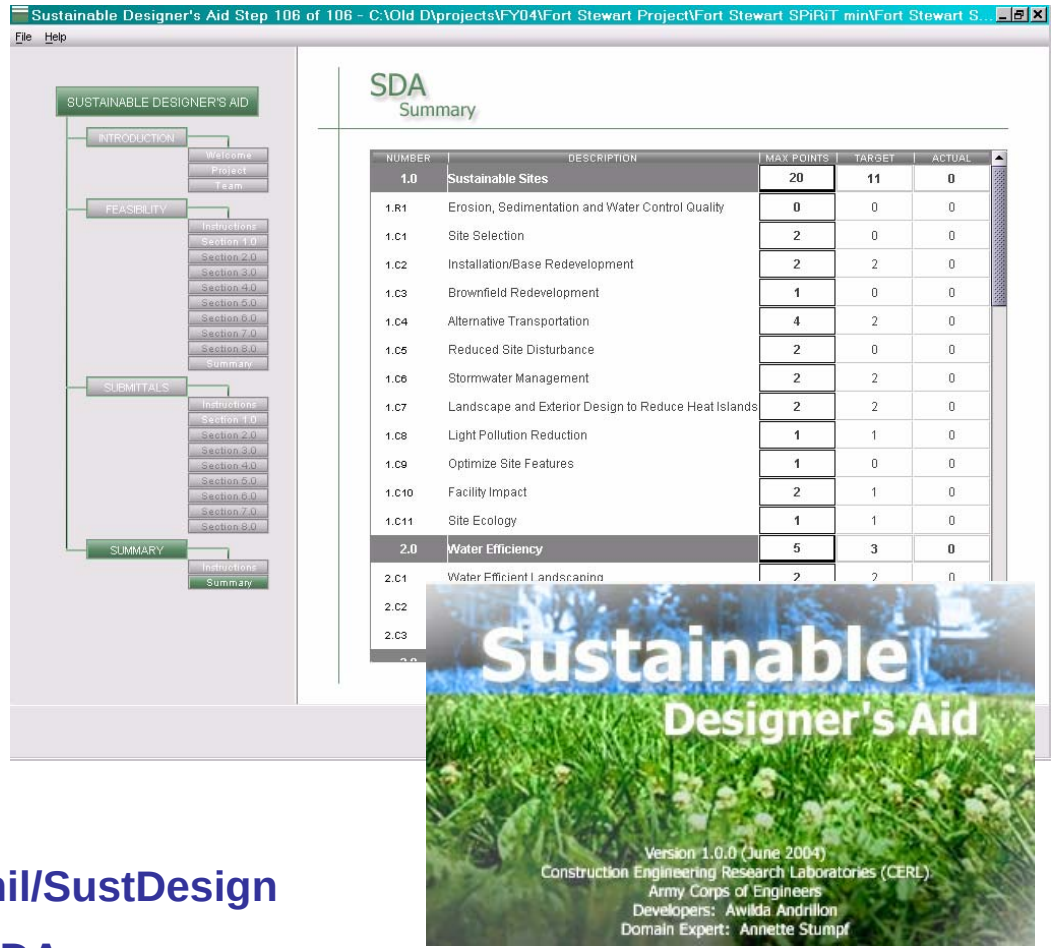


PACES, EarthTech,Inc.

Sustainability Analysis

Sustainable Designer's Aid

- Link to Sustainable Project Rating Tool(SPiRiT)
- Provide process for using SPiRiT
- Record and track rationale
- Generates SPiRiT rating
- Reuse previous strategies for subsequent projects



- **http://www.cecer.army.mil/SustDesign**
- **http://ff.cecer.army.mil/SDA**

Current Validation Activities

- **Army Reserve Testbed/Validation:**

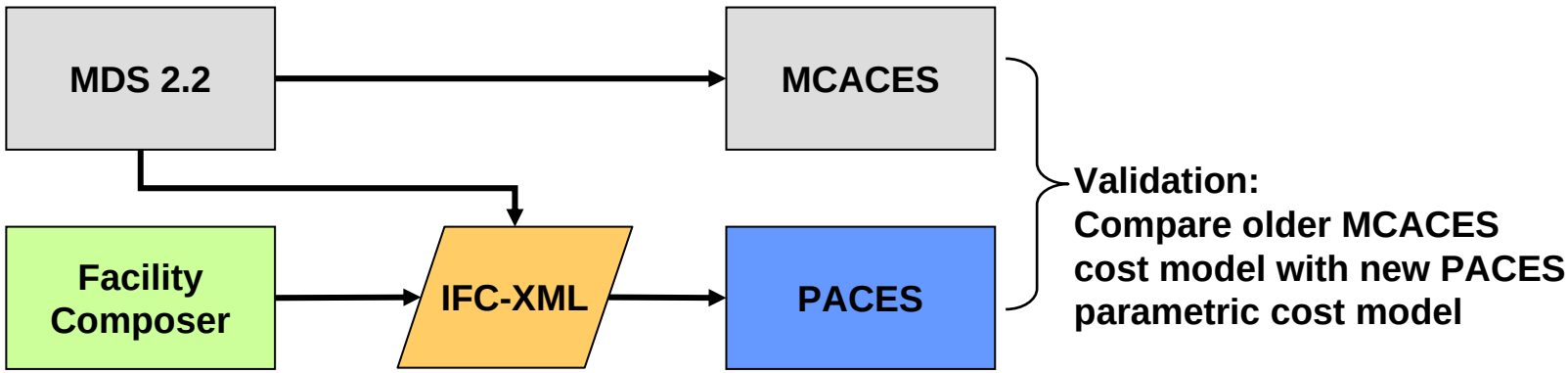
  Raleigh-Durham Army Reserve Center

  – Validation tests (Jul 03, Aug 03, Nov 03, Feb 04, Jun 04)

  – PACES Import functionality, cost model validation

  – 5034R Import and reporting functionality

  – Structural Framing Analysis functionality



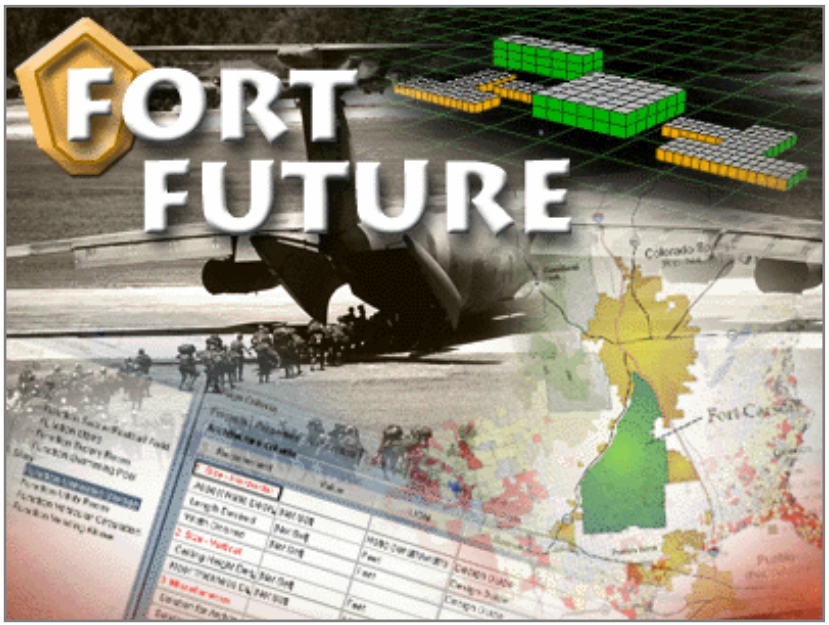
Current Pilot Activities

- **Parallel Charrettes with SAS, SWF**
  - *Ft. Bragg, Barracks Cpx/3rd Bde, (18-22 Aug 03)*
  - *Ft. Gordon, Child Care Center, (25-28 Aug 03)*
  - *Ft. Stewart, UA4 (1st BDE of 3rd ID), (22-26 Mar 04)*
- **Department of State, Annex Pilot Study**
  - *Design-build RFP, Success Integration*
- **Targeted ACSIM Pilot of Standard Facility**
  - *Chapel, Omaha COS*
  - *Physical Fitness Center, Huntsville Division COS*
- **NAVFAC HQ**
  - *Recapitalization (Builder -> Facility Composer)*

For More Information

Fort Future Site: http://ff.cecer.army.mil

Facility Composer Site: http://fc.cecer.army.mil



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