

spatial compliance information exchange (scie)

E. William East, PE, PhD
buildingSMART Alliance Project Coordinator

scope of the army facilities

78,029 Paved Miles
(3 times around earth)



Over 400 Boiler Plants



1.1 Billion Square Feet
(40 Sq. Miles Under One Roof)



12.1 Million acres of wetlands
(NJ, Conn, Delaware, RI)

scope of DoD facilities

577,000 structures

448 facility types

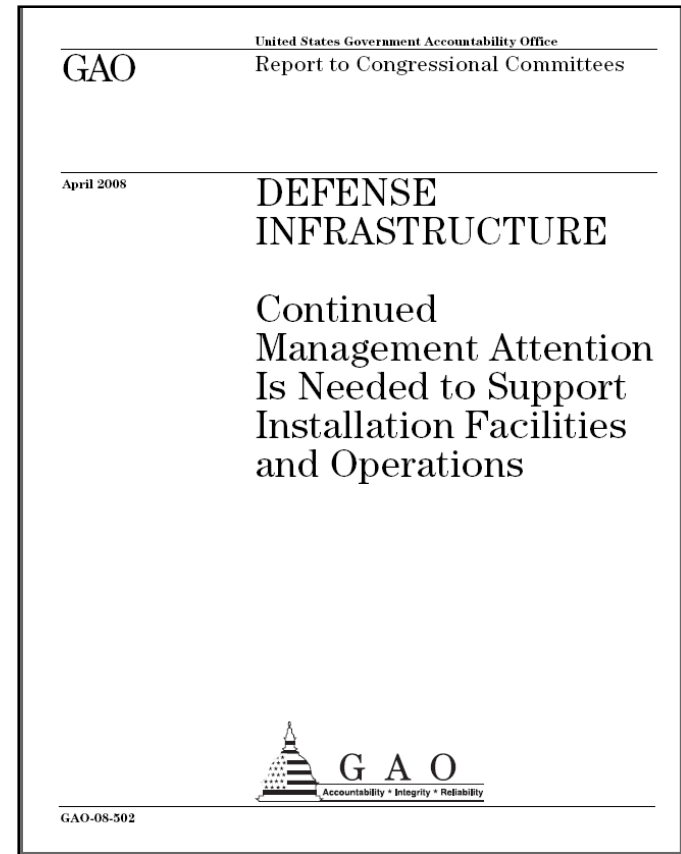
5,300 worldwide installations

\$ 712B replacement value

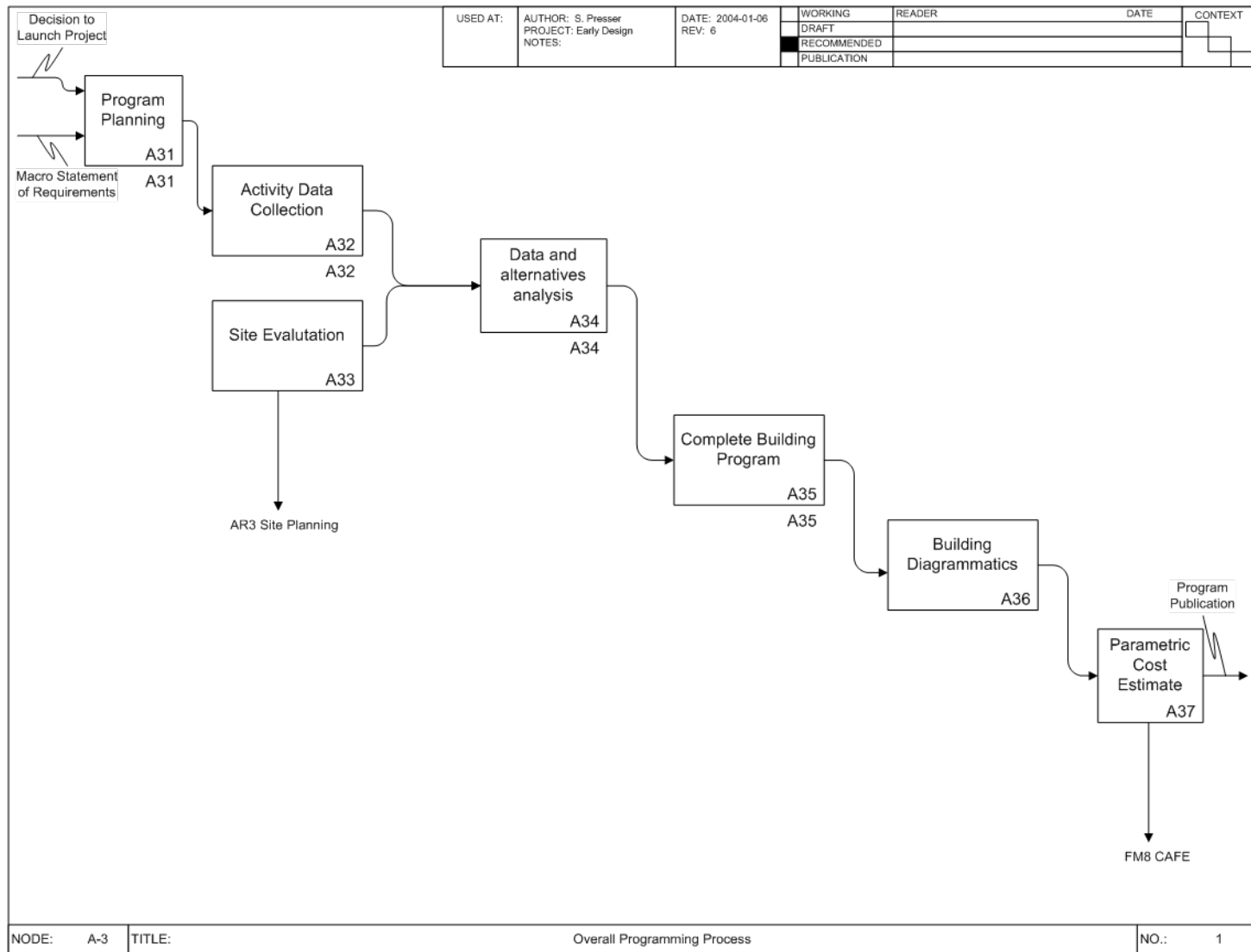
\$ 55B annual o&m budget

“ the Army and the Navy had not verified the accuracy of about 39 percent and 59 percent, respectively, of their real property inventory records during the 5 years ending with fiscal year 2007”

Underfunding results in personnel shortfalls leading to lack of ability to inventory and project requirements to project budgets.



iai “early design project” (ar-5)



room function, adjacency, zoning

[illegible]

SPACE ALLOCATION FIRST PHASE

I. WORSHIP / FELLOWSHIP

AUDITORIUM/FELLOWSHIP 1800
(150 @ 12 M / P.)

STORAGE - 25 TABLES / 80 CHAIRS

FOYER/RECEPTION/F.P. 600
(150 @ 4 II/P.)

2. ADMINISTRATION

PASTOR'S OFFICE 10X17 170

SECRETARY/WORK IN 10X17 170

3 RELIGIOUS ED. DIR. 10x12 120

PRE-SCHOOL DIR. 10x12 120

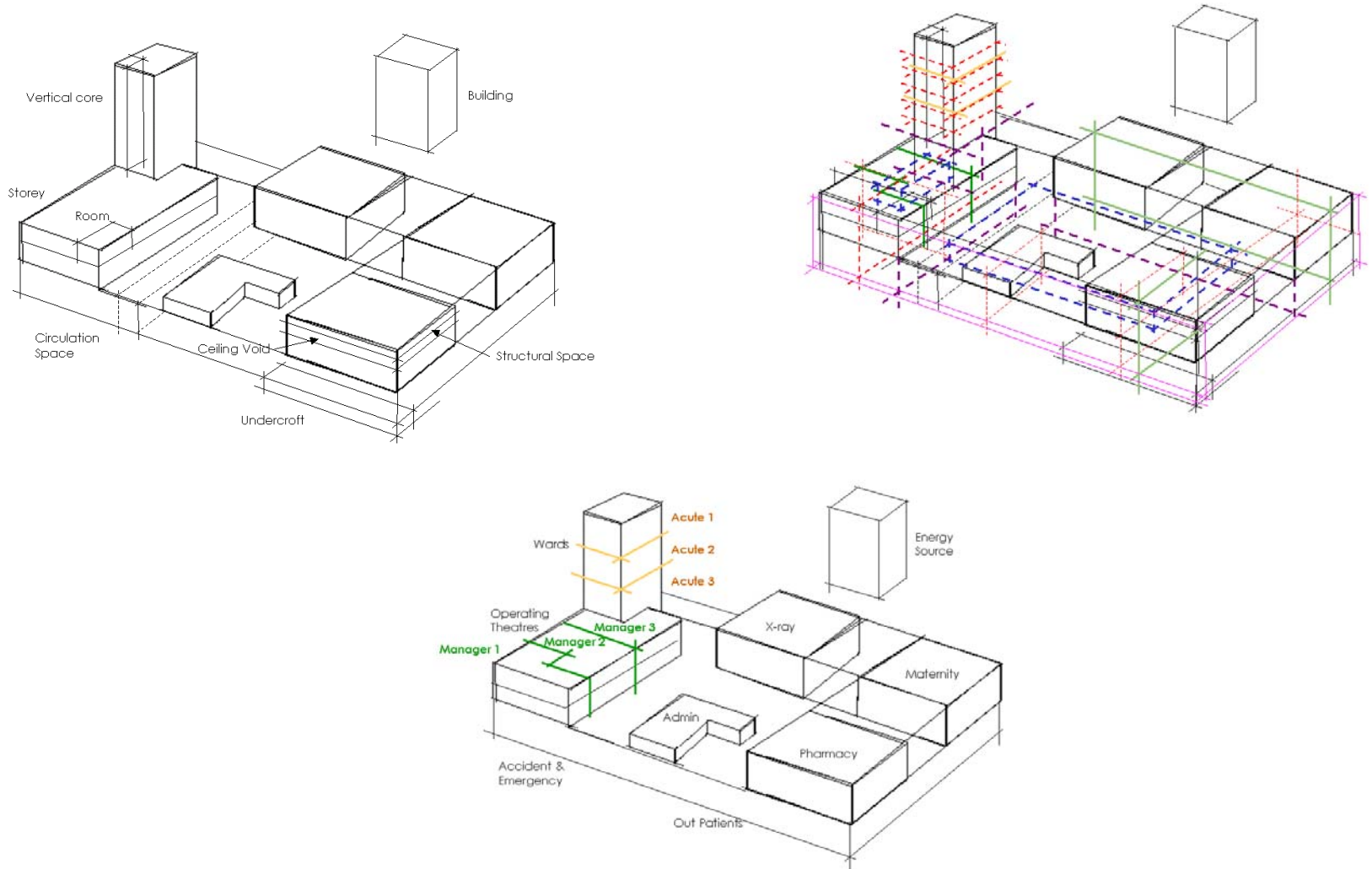
LIBRARY/CONF. RM 240
(20 P. @ 12 W/P.)

3. SERVICE

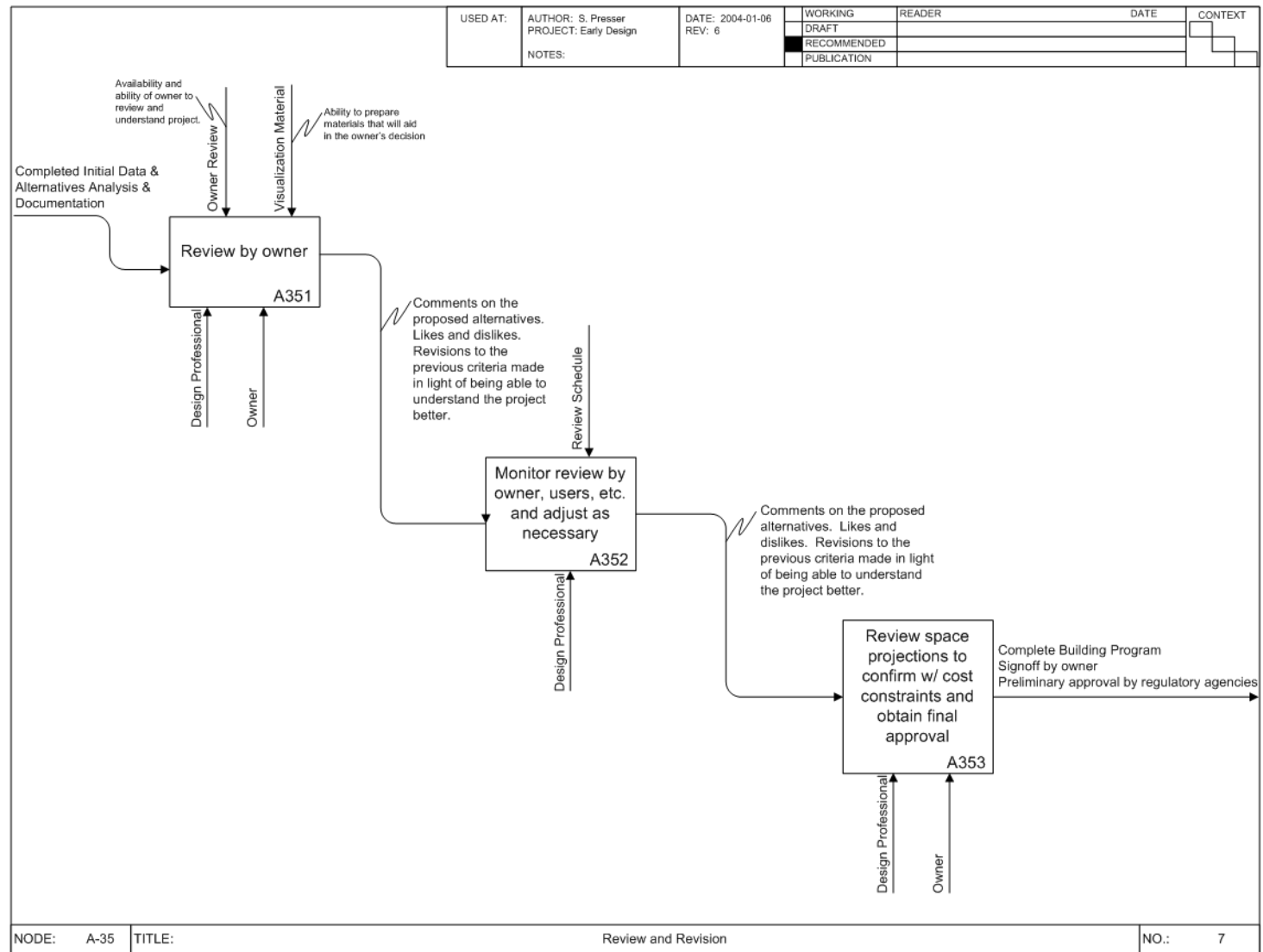
REST ROOMS (ADULT/CHILD) 4T, 4L, 2U 210

KITCHEN/UTILITY (DOUBLE REFR.) 200

block and stacking diagrams



review by owner



dd 1391

1. COMPONENT DEPTMA		FY 2008 MILITARY CONSTRUCTION PROJECT DATA		2. DATE 13 January 2005	
3. INSTALLATION AND LOCATION Pohang Camp KS252 South Korea			4. PROJECT TITLE Replacement Medical Clinic		
5. PROGRAM ELEMENT		6. CATEGORY CODE 55030	7. PROJECT NUMBER TED	8. PROJECT COST (\$000) 18,300	
9. COST ESTIMATE					
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)	
PRIMARY FACILITY					
Medical Clinic	SF	45,137	\$ 232.09	(12,628)	
ATFP Protection	LS			(750)	
Building Information Systems	LS			(426)	
Energy Management Control System (EMCS)	LS			(426)	
Intrusion Detection Alarm System (ISIDS)	LS			(54)	
Emergency Generator	LS			(0)	
Commissioning	LS			(107)	
O & M Manuals	LS			(54)	
SUPPORTING FACILITIES					
Electric Service	LS			(435)	
Water, Sewer, Gas	LS			(348)	
Steam and/or Chilled Water Distribution	LS			(326)	
Paving, Walks, Cuts and Gutters	LS			(253)	
Storm Drainage	LS			(218)	
Site Imp. (436) Demo (88)	LS			(524)	
Information Systems	LS			(103)	
Antiterrorism Force Protection	LS			(153)	
Redundant Systems	LS			(105)	
ESTIMATED CONTRACT COST				15,034	
CONTINGENCY (5.00%)				752	
SUBTOTAL				15,786	
SUPERVISION, INSPECTION, ADMIN OVERHEAD (6.50%)				977	
CATEGORY EQUIPMENT				1,503	
TOTAL REQUEST				18,266	
TOTAL REQUEST (ROUNDED)				18,300	
INSTALLED EQT-OTHER APPROPRIATIONS				2,192	
10 Description of Proposed Construction Construct a replacement community medical clinic of permanent, fire resistant construction, complete with laboratories, 11 examination and 3 treatment rooms, secured pharmacy, X-Ray, administrative and service support areas. This project will allow the release of the existing building from medical control and back to the installation. Provide required curbs, gutters, site work, storm drainage, required utilities services, and dental telecommunications systems so as to comply with legal and professional accreditation, and fire, life and safety standards. Necessary interim facilities will be provided. This project will be designed in accordance with MIL-HDBK-1191, the Uniform Federal Accessibility Standards (UFAS)/Americans with Disabilities Act (ADA) Accessibility Guidelines, and Anti-Terrorism Force Protection (ATFP) standard. Operations and Maintenance Manuals will be provided. Project is not sited in a flood plain. Air conditioning: 154 tons.					

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1 DEC 76

Page No. 1

- medical clinic example
 - 11 examination rooms
 - 3 treatment rooms
 - x-ray room
 - Administrative area
 - Service/support area

are “you” getting the building you bought?

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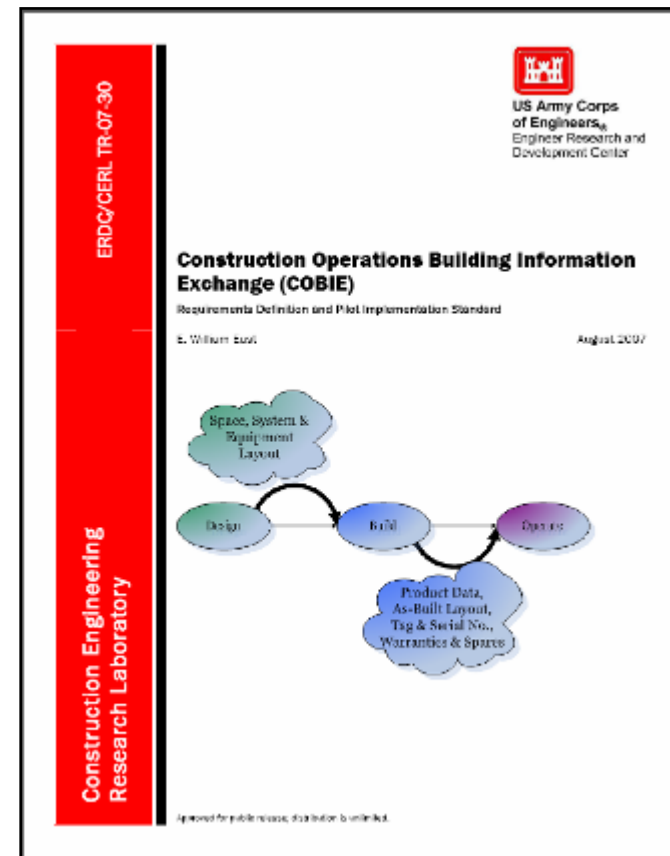
Page No. 1

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information exchange via COBIE

research results documented in
technical report (wbdg.org)
includes o & m and ...

- **asset management**
 - functional classification
 - space measurement
 - zoning
 - blocking diagram



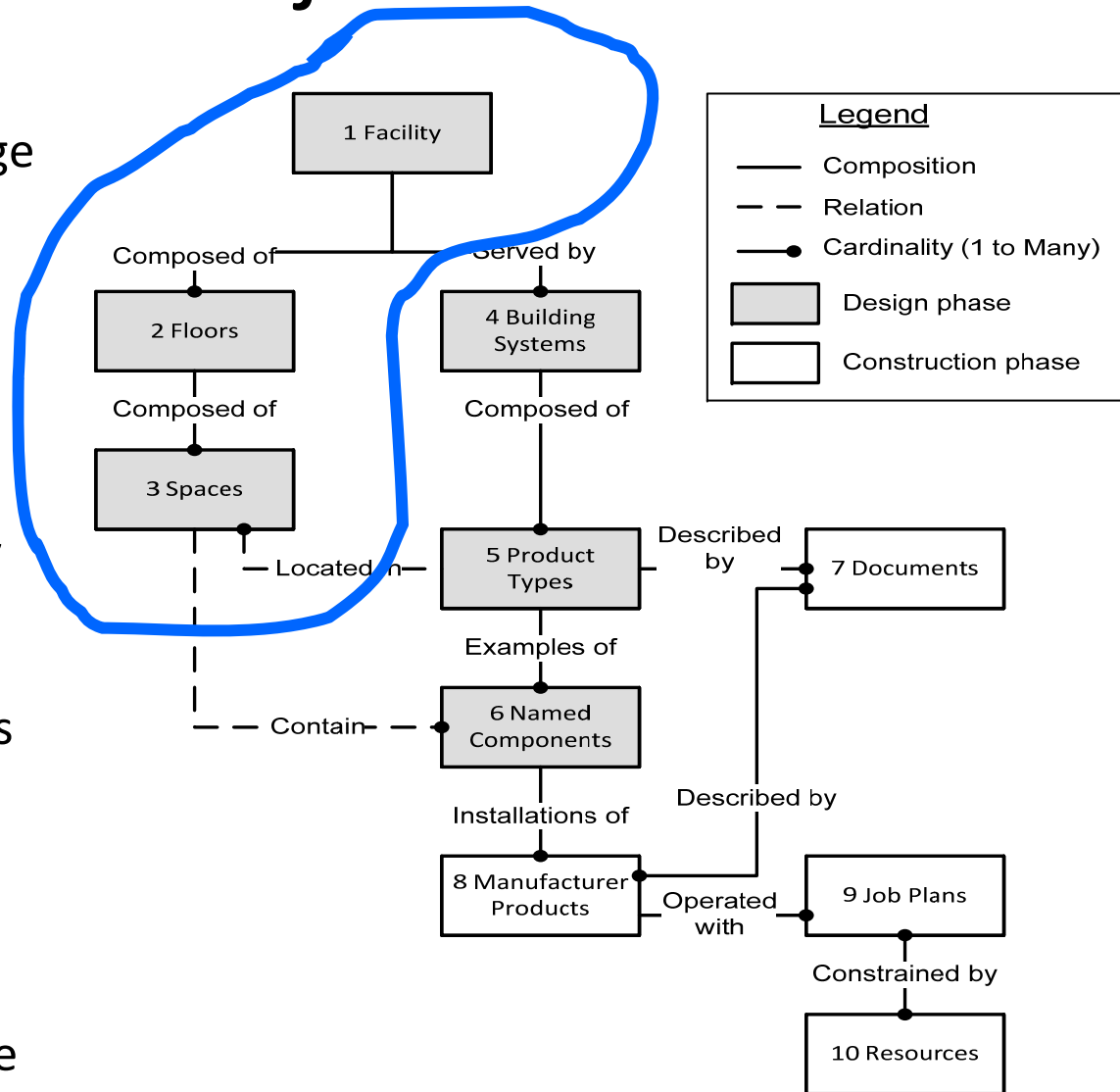
August 2007

cobie object model

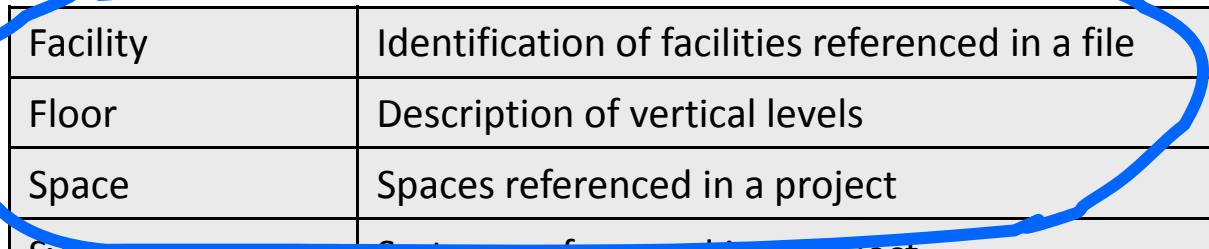
Requirements for information exchange directly match IFC model.

difficulties?

- specification for information delivery
- insuring consistent nomenclature across domains
- implementation of cobie model view definition in commercial software

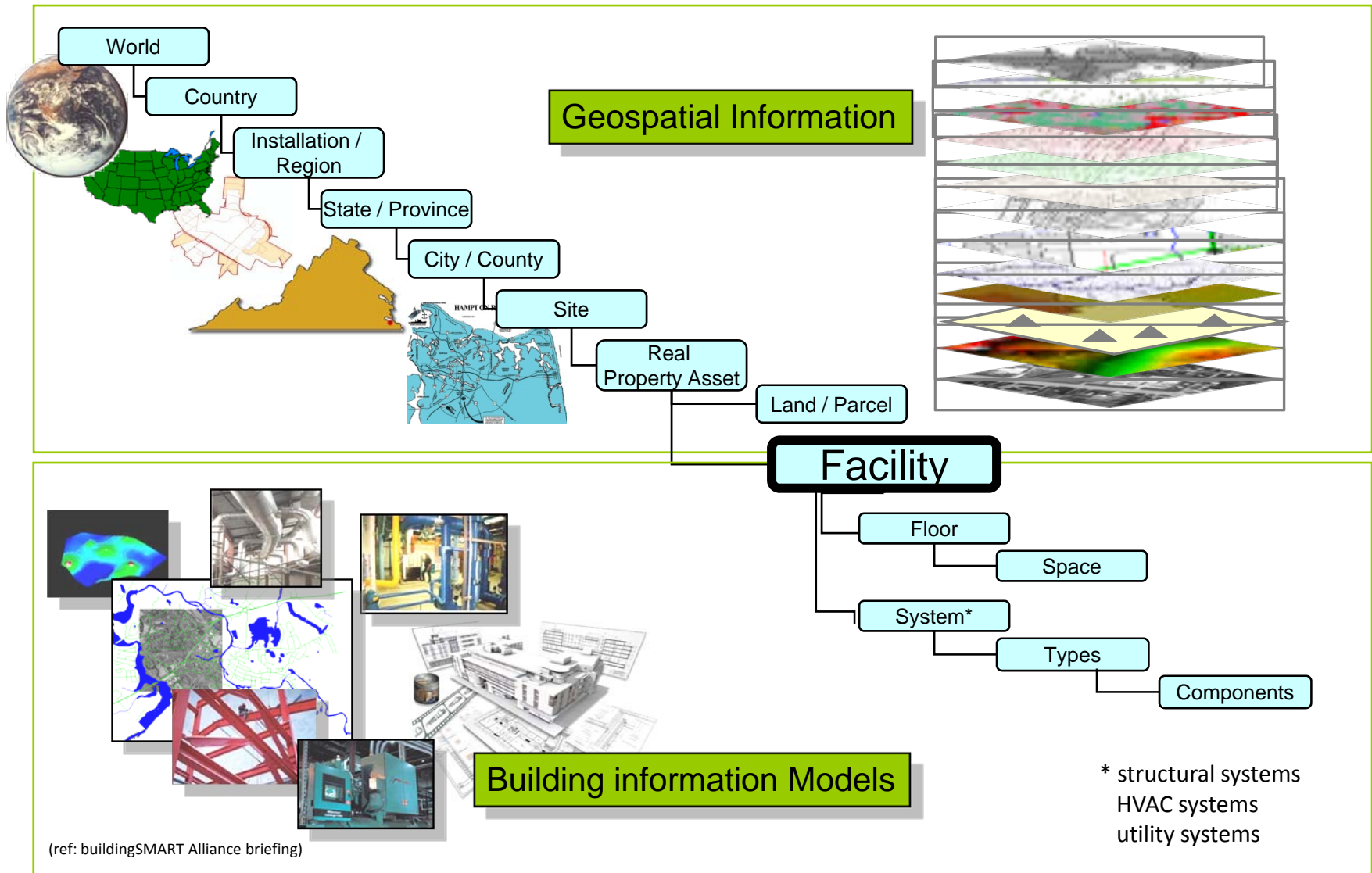


designers' data



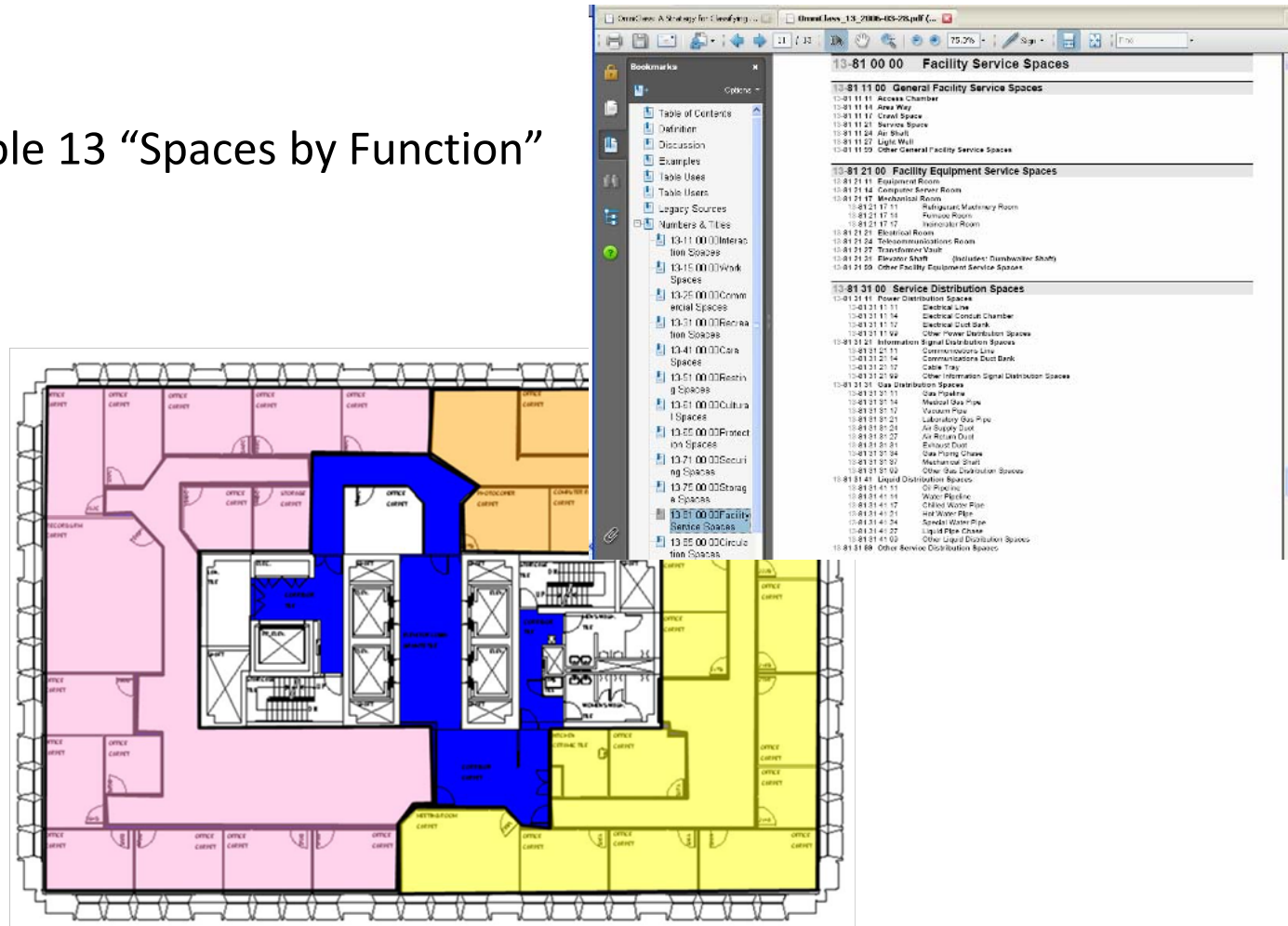
Facility	Identification of facilities referenced in a file
Floor	Description of vertical levels
Space	Spaces referenced in a project
System	Systems referenced in a project
Register	Material/equipment/etc. catalog (submittal register)
Component	Individually named materials and equipment

link to portfolio via. owner's facility id



space capabilities

OmniClass Table 13 “Spaces by Function”



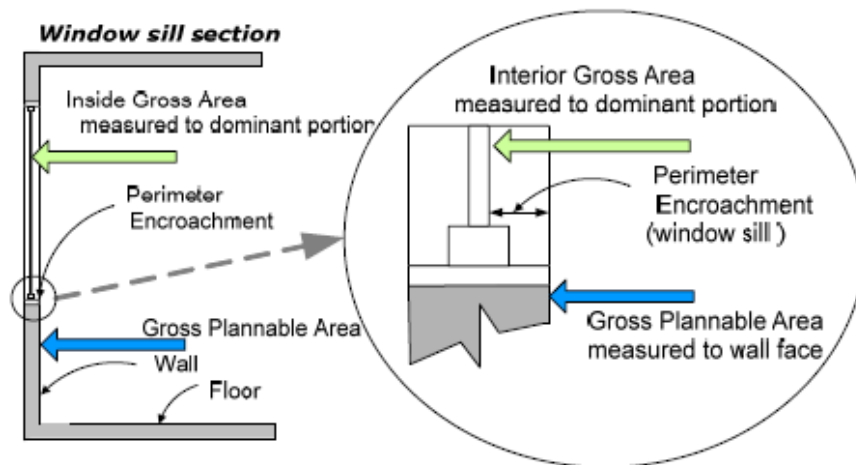
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space measurement

IFMA and BOMA requirements for spatial measurement have been harmonized as represented in:
 ASTM E 1836-01 Standard Practice for Building Floor Area Measurements for Facility Management and
 ANSI standard being updated

Point of Contact: davis-gerald@icf-cebe.com

Interior Gross Area



Comprehensive measurement rules

Key to Measurement Rules for Facility Management		Interior Gross Area												
		Plannable Gross Area												
		Plannable Area												
		Dominant Portion	Perimeter Encroachment	Major Vertical Penetration	Void Area	Service Area	Primary Circulation	Restricted Area	Interior Encroachment	Occupant Void Area	Assignable Area	Unassignable Area	Secondary Circulation	
Interior Gross Area	Dominant Portion	OPT	OPT	D1	D1	D1	D1	D1	N/A	D1	D1	D1	D1	
	Perimeter Encroachment	OPT	OPT	D1	D1	D1	D1	D2	D2	D2	D2	D2	D2	
	Major Vertical Penetration	D1	D1	C	W	W	W	W	W	W	W	W	W	
	Void Area	D1	D1	F	C	W	W	W	W	W	W	W	W	
	Service Area	D1	D1	F	F	C	W	W	W	W	W	W	W	
	Primary Circulation	D1	D1	F	F	F	C	W	W	W	W	W	W	
	Restricted Area	D1	D2	F	F	F	F	C	W	W	W	W	W	
	Interior Encroachment	N/A	D2	F	F	F	F	F	C	W	W	W	W	
	Occupant Void Area	D1	D2	F	F	F	F	F	F	C	W	W	W	
	Assignable Area	D1	D2	F	F	F	F	F	F	F	C	W	W	
	Unassignable Area	D1	D2	F	F	F	F	F	F	F	F	C	W	
	Secondary Circulation	D1	D2	F	F	F	F	F	F	F	F	F	C	

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GSA guide for space planning BIM

GSA lead the use of BIM in the federal government through it's specification directly targeting architectural programming.

GSA's experience supported, in part, the creation of the buildingSMART Alliance that ultimately helped lead to this meeting.

GSA Space Planning Guide	Spatial Compliance Information Exchange (SCIE)
GSA Space Categories	OmniClass Table 13
GSA Space Measurement standard	Harmonized BOMA/IFMA standard
GSA-specific zoning requirements	Contractually-based zone property set
GSA-specific occupant identification	Contractually-based space property set

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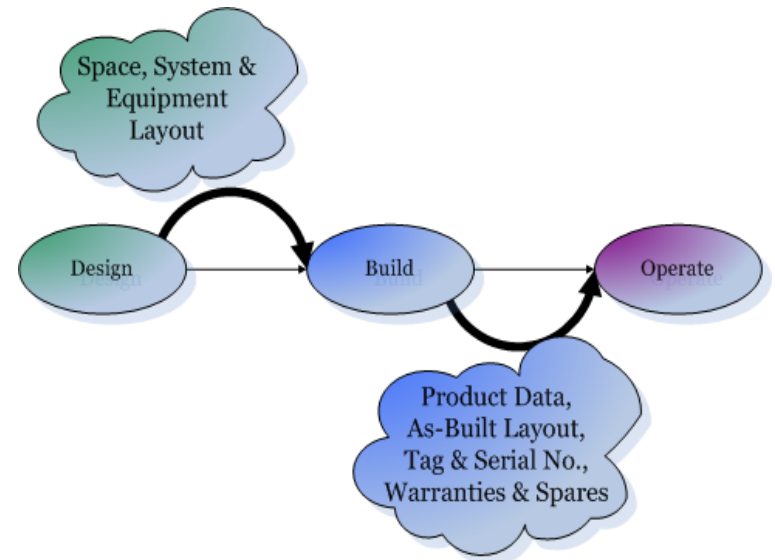
scie implementation

designer submits scie in cobie file with
“native” design deliverable

succinct scie specification feeds cobie
needed downstream with
no additional work.

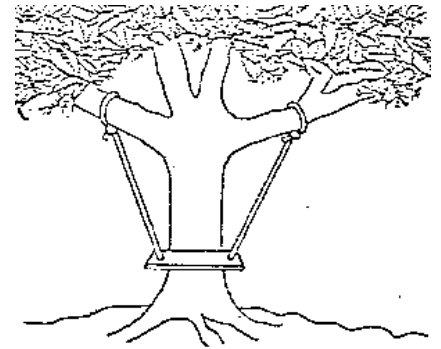
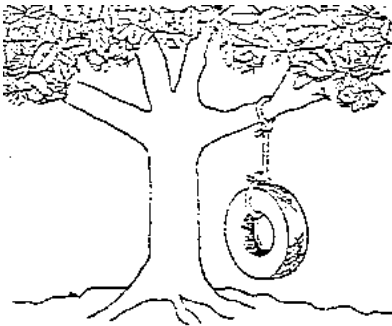
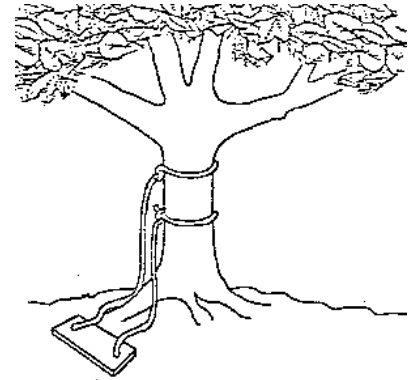
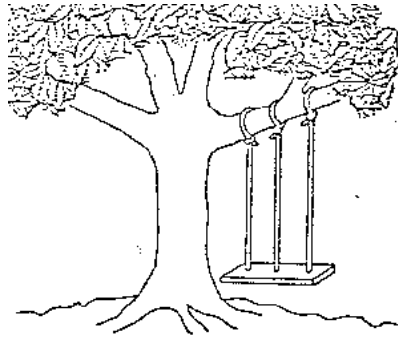
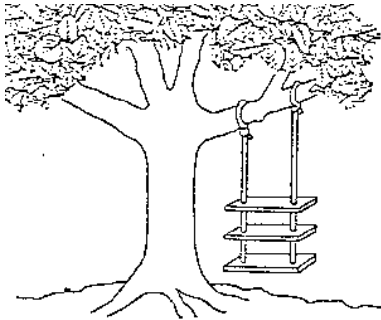
maturity model of implementation
allows vendors to quickly
implement space-function portion
now

some have included blocking diagram
already but we did not include that
in today’s results - future meeting
will demonstrate zoning and block
diagram.



please help us...

to make sure we correctly describe the project at each phase...



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