

SPACE PLANNING AND MANAGEMENT
 INDIANAPOLIS, IN
 SEPTEMBER 2023

PROCESS
 IMPORTANCE
 DEFINITIONS
 INVENTORIES
 MANAGEMENT
 PROGRAM NEEDS
 ANALYSIS
 TRENDS

Space Planning

JOE BILOTTA,
 JBA 1 INCORPORATED
WWW.JBA1.COM
 JOE@JBA1.COM

Space Planning and Management

1

PROCESS

Program People Resources Work

MASTER PLAN

LONG RANGE PLANS

PROJECT PLANS

IMPLEMENTATION (DESIGN AND CONSTRUCTION)

Space Planning and Management

2

WHY IS IT IMPORTANT?
 HERMAN / Jim Unger

• **Largest Asset**
 • **Provide Physical Environment**
 • Program Needs
 • Capital Assessments
 • Research Reporting
 • **Develop Priorities**
 • Capital
 • Maintenance
 • **Statewide Analysis**
 • **GOOD BUSINESS**

"Here, you want to be plant manager. Take care of this!"

Space Planning and Management

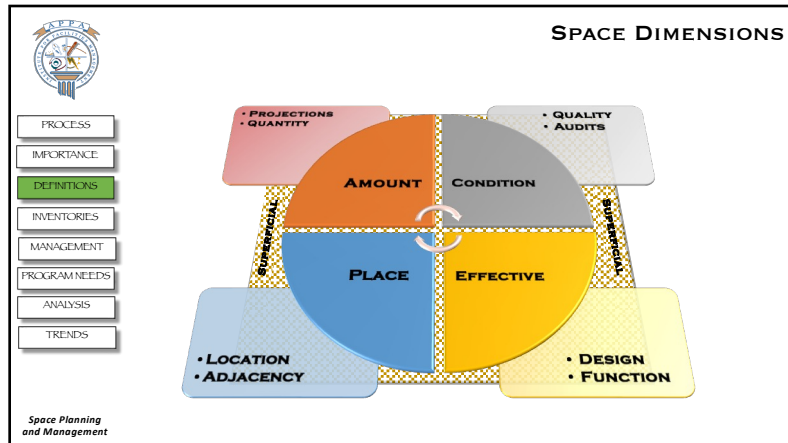
3

SPACE USE NEEDED FOR.....

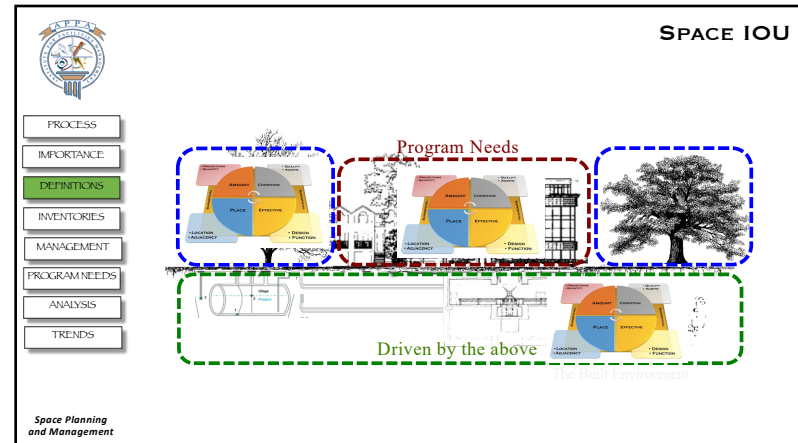
- **Master Planning**
- **Long Range Planning**
- **Building Programming**
- **Accreditation Issues**
- **Budget/Funding Requests**
- **Maintenance/Repair and Replacement Issues**
- **Space Efficiency Studies**
- **Appropriate Space Allocations**
- **Understand Space Adjacencies**
- **Research Accountability**
- **Proper Space Use – Program Locations**
- **Operating Cost Allocations**

Space Planning and Management

4



5



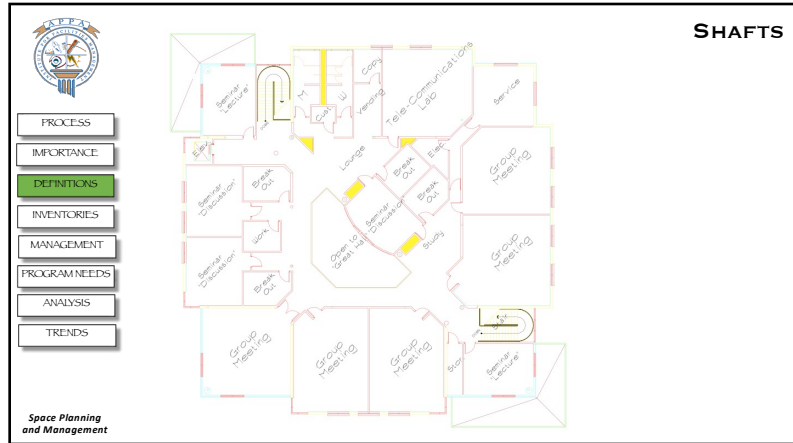
6



7



8



9




10



11



12




SOME FUN SPACE FACTS

Percent of Useable ASF – GSF

- Office
- Classroom
- Library
- Research Laboratory
- Other


Largest Campuses

Percent Campus Space



Space Planning and Management

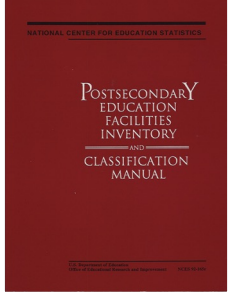
13



FICM


**Post Secondary Education
Facilities Inventory and
Classifications Manual**

National Center for Education
Statistics, Revised and Reprinted
April 1997, NCES (92-165r)
nces.ed.gov/pubs/92165.pdf



Space Planning and Management

14



MAJOR CLASSIFICATIONS

Classroom Spaces 100-199's

Laboratory Spaces 200-299's

Office Spaces 300-399's

Study Spaces 400-499's

Special Use Spaces 500-599's

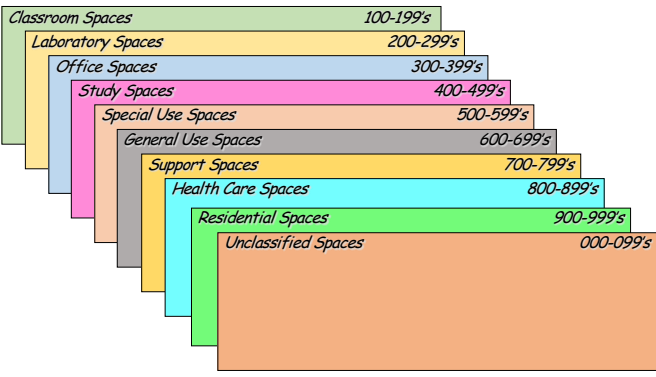
General Use Spaces 600-699's

Support Spaces 700-799's

Health Care Spaces 800-899's

Residential Spaces 900-999's

Unclassified Spaces 000-099's



Space Planning and Management

15



CLASSROOM SPACES




110 Classroom

115 Classroom Service

Space Planning and Management

16



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management



LABORATORY SPACES

210	Class Laboratory
215	Class Laboratory Service
220	Open Laboratory
225	Open Laboratory Service
250	Research/Nonclass Laboratory
255	Research/Nonclass Laboratory Service




17



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

OFFICE SPACES

310	Office
315	Office Service
350	Conference Room
355	Conference Room Service






18



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management


STUDY SPACES

410	Study Room
420	Stack
430	Open-Stack Study Room
440	Processing Room
455	Study Service





19

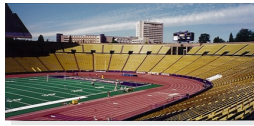

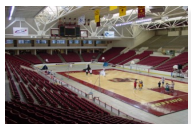





- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

SPECIAL USE SPACES

510	Armory
515	Armory Service
520	Athletic or Physical Education
523	Athletic Spectator Seating
525	Athletic or PE Education Service
530	Media Production
535	Media Production Service
540	Clinic
545	Clinic Service
550	Demonstration
555	Demonstration Service
560	Field Building
570	Animal Facilities
575	Animal Facilities Service
580	Greenhouse
585	Greenhouse Service
590	Other (All Purpose)

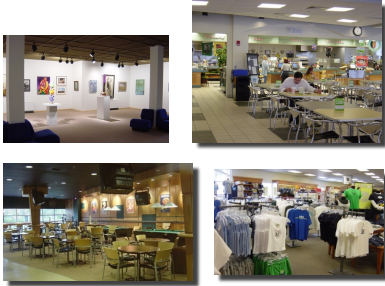
20



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

GENERAL USE SPACE



- 610 Assembly
- 615 Assembly Service
- 620 Exhibition
- 625 Exhibition Service
- 630 Food Facility
- 635 Food Facility Service
- 640 Day Care
- 645 Day Care Service
- 650 Lounge
- 655 Lounge Service
- 660 Merchandising
- 665 Merchandising Service
- 670 Recreation
- 675 Recreation Service
- 680 Meeting Room
- 685 Meeting Room Service

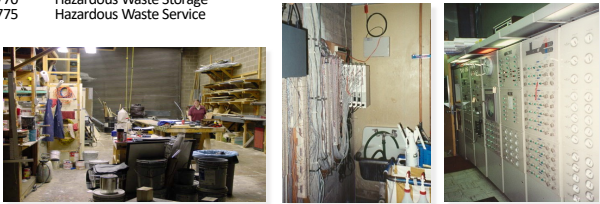
21



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

SUPPORT SPACES



- 710 Central Computer or Telecommunications
- 715 Central Computer or Telecommunications Service
- 720 Shop
- 725 Shop Service
- 730 Central Storage
- 735 Central Storage Service
- 740 Vehicle Storage
- 745 Vehicle Storage Service
- 750 Central Service
- 755 Central Service Support
- 760 Hazardous Materials Storage
- 770 Hazardous Waste Storage
- 775 Hazardous Waste Service


22



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

HEALTH SPACES



- 810 Patient Bedroom
- 815 Patient Bedroom Service
- 820 Patient Bath
- 830 Nurse Station
- 835 Nurse Station Service
- 840 Surgery
- 845 Surgery Service
- 850 Treatment/Examination Clinic
- 855 Treatment/Examination Clinic Service
- 860 Diagnostic Service Laboratory
- 865 Diagnostic Service Laboratory Support
- 870 Central Supplies
- 880 Public Waiting
- 890 Staff On-Call Facility
- 895 Staff On-Call Facility Service

23



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

RESIDENTIAL SPACES



- 910 Sleep/Study Without Toilet or Bath
- 919 Toilet or Bath
- 920 Sleep/Study With Toilet or Bath
- 935 Sleep/Study Service
- 950 Apartment
- 955 Apartment Service
- 970 House

24




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

NON-ASSIGNABLE AND UNCLASSIFIED SPACES

000	Unclassified Facilities
050	Inactive Area
060	Alteration or Conversion Area
070	Unfinished Area
WWW	Circulation Area
W01	Bridge/Tunnel
W02	Elevator
W03	Escalator
W04	Loading Dock
W05	Lobby
W06	Public Corridor
W07	Stairway
XXX	Building Service Area
X01	Custodial Supply Closet
X02	Janitor Room
X03	Public Rest Room
X04	Trash Room
YYY	Mechanical Area
Y01	Central Utility Plant
Y02	Fuel Room
Y03	Shaft
Y04	Utility/Mechanical Space



25




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

MANAGING THE INVENTORY

Correct Classifications/Consistency
 Unclassified Spaces
 Multipurpose or Multi Use
 Level of Public Access
 Unique Sub-codes
 Don't Confuse User with Use



26




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

WAYS TO MANAGE SPACE

Team vs Office
 FM vs. Other
 Space Requests
 Perceptions Regarding Costs
 Evaluations
 Lease Back Programs



27



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

USE OF GUIDELINES

- ❖ University Space Planning Guidelines by Bariether & Schillinger
- ❖ WICHE Higher Education Facilities Planning and Management Manuals
- ❖ CEPFI Space Planning Guidelines for Institutions of Higher Education

- ❖ Association of Physical Plant Administrators
- ❖ Mandated Guidelines

❖ CREATE YOUR OWN

28



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS


Space Planning and Management

PROGRAM VS. SPACE

Classroom Buildings
 Research Centers
 Libraries
 Residence Halls
 Clinics
 Day Care Centers
 Bookstores




29



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

OUTDOOR SPACE



30



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

RE-EVALUATING PROGRAM NEEDS




STEVEN JOHNSON
 Writer and Semiotics Expert, Steve Johnson

Where do Good Ideas Come From?

http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from.html


31



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management


CLASSROOM AND INSTRUCTIONAL LAB ANALYSIS



TIME DEPENDENT

- ❖ Contact Hours vs. Credit Hours
- ❖ Additional Uses
- ❖ Room Utilization
- ❖ Station Efficiency
- ❖ ASF per station
- ❖ Learning Methodologies

32



CLASSROOM ANALYSIS

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS

Contact Hours

Weekly Hours * Room Utilization * Station Efficiency
= Number of Stations
Stations * ASF per Station =
TOTAL ASF

600 stdnts * 2 credits * 1 contacts/day

40 Hours * 75% Utilization * 67% Station Efficiency

1200/20.1 = 59.7 or 60 Stations

60 Stations * 30 ASF per Station =


1800 TOTAL ASF

or 1200

or 20.1

Space Planning and Management

33



LABORATORY ANALYSIS

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS

Contact Hours

Weekly Hours * Room Utilization * Station Efficiency
= Number of Stations
Stations * ASF per Station =
TOTAL ASF

600 stdnts * 2 credits * 4 contacts/day

40 Hours * 50% Utilization * 80% Station Efficiency

4800/16 = 300 Stations

300 Stations * 60 ASF per Station =


18,000 TOTAL ASF

or 4800

or 16

Space Planning and Management

34



SPACE MODELING

PROCESS

IMPORTANCE

DEFINITIONS


INVENTORIES

MANAGEMENT


PROGRAM NEEDS

ANALYSIS

TRENDS




- ❖ Scenario Planning
- ❖ Testing by Administration
- ❖ Testing Operations
- ❖ Data Driven Analysis
- ❖ Can Adjust as Campus Changes
- ❖ Multiple Uses
- ❖ NO REPORTS !



Space Planning and Management

35



ANALYSIS APPROACH – UNIVERSITY OF IOWA

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS

```

graph TD
    A[Driving Demographics] --> B[University Guidelines]
    B --> C[Analysis]
    C --> D[Space Plan]
    D --> E[Master Plan]
    
    subgraph Inputs
        D1[Data Used]
        D2[Program Input]
        D3[People Schedules Activity Materials Items Other]
        D4[Shape Plan Changes Initiatives Program People Tools Other]
        D5[Policies and Expectations]
        D6[Rules Standards Goals Measures Utilizations Other]
        D7[Area Metrics]
        D8[Architecture Areas Design Relationships Other]
        D9[Current]
        D10[Future Testing Deltas Other]
    end
    
    Inputs --> C
    
```

Space Planning and Management

36



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

INCREASED USE



Label	Code	Description	Area	Count	Percentage
Lab000	A	Guest Lecture (one)		1	100%
Lab000	A	Guest Lecture (one)		1	
Lab000	A	Guest Lecture (one)		1	
Lab000	A	Special Conferences		1	
Lab000	A	Training Sessions		1	
Lab000	B	Symposiums		1	24
Lab000	B	Conferences		1	
Lab000	C	Disseminations		1	
Lab000	C	Conferences		1	
Lab000	C	Exams, IQG's		1	
Lab000	C	Other		1	
Lab000	D	Administrative Meetings		1	8
Lab000	D	Academic Meetings		1	
Lab000	D	Research Meetings		1	
Lab000	D	ETA Meetings/Staffing		1	24
Lab000	D	Reading/Research		1	
Lab000	D	Student/OSA Meetings		1	20
Lab000	E	Days Parties/Gatherings		1	
Lab000	E	Research Conferences		1	
Lab000	E	Workshops/Receptions		1	16
Lab000	E	Conferences		1	
Lab000	E	Other Small Group Gatherings		1	
Lab000	F	Recruitment		1	
Lab000	F	Interviews		1	
Lab000	G	Poster Sessions		1	
Lab000	H	Staff and Directors Dinner		1	
Lab000	H	Large Presentation		1	
Lab000	H	Large Presentation (one)		1	
Lab000	I	Other		1	

37




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

TEACHING AND LEARNING PEDAGOGIES



38





- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

TEACHING AND LEARNING PEDAGOGIES



Seminar

Instructional space intended for focused group work. Instructor is typically part of the group and does not lecture for a few minutes per class period. The majority of the class time consists of interaction among the students. Teaming, collaboration, and discussion are most prevalent.





Lecture

The traditional classroom space supporting didactic pedagogies of varying class sizes. Space may include minor two-way communication using clickers or computers but its primary purpose is lecture based instruction. Larger rooms are tiered and are not very flexible.

39





- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

TEACHING AND LEARNING PEDAGOGIES



Grouping/Pods

Group learning spaces promote a combination of lecture based instruction with the capability of breaking out into small groups. Spaces promote a variety of pedagogies in class period. Project teaming and discussion occur periodically during a class period.





Computer

Instructional space that requires the use of computers for the majority of the class period. Computer classes can be used by a variety of programs. Space can also double as open lab time when classes are not being held. Hardware and software's are typically common amongst many programs.

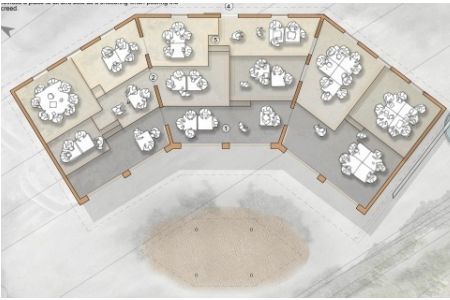



40




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

TEACHING AND LEARNING PEDAGOGIES



Space Planning and Management

41

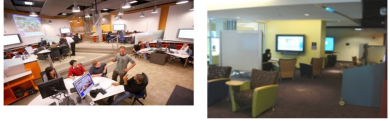


- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

TEACHING AND LEARNING PEDAGOGIES


Flexible/Adaptable/Multi-Environment

Adaptable Spaces are those that can be configured in a variety of ways. These spaces are meant to support change within the hour. They are not conducive to any one type of pedagogy.



Lecture Breakout

A space where a large lecture would meet for part of the class time, then break out into private spaces, possibly meeting again as a large lecture before completing the class period.



Space Planning and Management

42



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

TEACHING AND LEARNING PEDAGOGIES

Table Based

This is similar to a lecture space but has a large table, per person, for private and quiet (not teaming or group work) work when not lecturing.




Telepresence (video conference)

Smaller classrooms with video-conference capabilities. These spaces require connectivity with other locations on a continuous basis (almost every class period).



Space Planning and Management

43




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

TEACHING AND LEARNING PEDAGOGIES


Presentation

This space is a sharable classroom with tools to train/teach proper presentation skills. Recording capability and feedback from the audience is essential.




Movement

This classroom is for instruction that requires physical movement of students but is not unique enough to be considered a laboratory. This can be seen in the arts, humanities, fitness, and other programs.



Space Planning and Management

44


2D VS 3D

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS


ANALYSIS

TRENDS

❖ Most Space Planning is One-Dimensional

❖ Master Planning vs. Project Planning

❖ Postage Stamp vs. Performance Hall



Space Planning and Management

49


2D VS 3D

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS


130 vs 6000

15X



Space Planning and Management

50


SPACE AUDITS

PROCESS

IMPORTANCE

DEFINITIONS

INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS

Building Name: Trade Hall

Building Number: DBH

Net Sq. Ft.: 16,307

Gross Sq. Ft.: 20,094

Quality Level: 3.2189

0-1 Repair and Replace

1-2 Major Improvements

2-3 Minor Improvements


3-4 Meets Program Needs

4-5 Exceed Program Needs

Room Information			Design				Light		Equipment		Environment		Average Quality Level		
Room Number	Space Type (FURN CODE)	Room Area (SQUARE FT)	Accessibility	Workings	Layout	Flexibility	Finishes	Natural	Artificial	Technology	Equipment	Power	Air Quality	Acoustics	
1	CIRC	265	3	3	3	3	3	3	3	3	3	3	3	3	3.00
1A	CIRC	152	3	3	3	3	3	3	3	3	3	3	3	3	3.00
1B	CIRC	56	3	3	3	3	3	3	3	3	3	3	3	3	3.00
1C	CIRC	12	3	3	3	3	3	3	3	3	3	3	3	3	3.00
1D	CIRC	171	3	3	3	3	3	3	3	3	3	3	3	3	3.00
2	CUST	238	4	3	2	3	4	4	4	4	4	4	2	4	3.50
3	MECH	83	4	4	4	4	4	4	4	4	4	4	2	4	3.83
4	CIRC	55	3	3	3	3	3	3	3	3	3	3	3	3	3.00
4A	CIRC	36	3	3	3	3	3	3	3	3	3	3	3	3	3.00
5	LBSV	219	3	3	3	3	3	3	3	3	3	3	3	3	3.00
6	CUST	79	3	3	3	3	3	3	3	3	3	3	3	3	3.00
7	OLAB	319	3	3	3	3	3	3	3	3	3	3	3	3	3.00
8	COML	47	3	3	3	3	3	3	3	3	3	3	3	3	3.00
9	OFF	136	3	3	3	3	3	3	3	3	3	3	3	3	3.00
9A	OLAB	80	3	3	3	3	3	3	3	3	3	3	3	3	3.00
10	ARC	1461	4	4	4	4	4	4	4	4	4	4	2	4	3.75
11	OFF	164	2	2	2	2	2	4	3	4	4	2	2	3	2.67

Space Planning and Management

51


STUDENT EXPECTATIONS

PROCESS

IMPORTANCE

DEFINITIONS

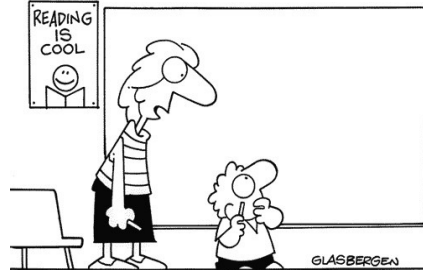
INVENTORIES

MANAGEMENT

PROGRAM NEEDS

ANALYSIS

TRENDS




Copyright 1996 Randy Glasbergen. www.glasbergen.com

GLASBERGEN

"There aren't any icons to click. It's a chalk board."

Space Planning and Management

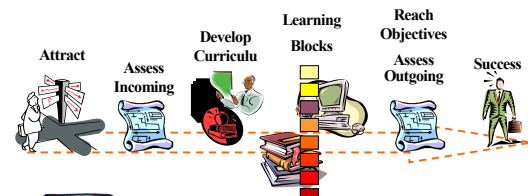
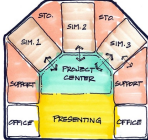
52



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

STUDENT CENTERED

- Individual, Self-Paced
- Internships
- One-on-One
- Simulation
- Small Team
- Lab Grouping
- Group Study
- Presentation
- Clinical
- Learning Resources

STATE OF CHARGE "SERVING THE"

53




- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

SPACE AND BUILDING SIMULATION



54


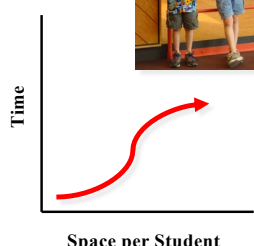


- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management


SPACE PER STUDENT IS RISING

- ❖ Additional Tools
- ❖ Reduced Class Sizes
- ❖ Computers at Stations
- ❖ Imaging and Projections Systems
- ❖ Collaborative Spaces
- ❖ Higher Percentage of Experiential
- ❖ Academic Support Programs

**Does Web Based Instruction
Balance the Increase in Space?**

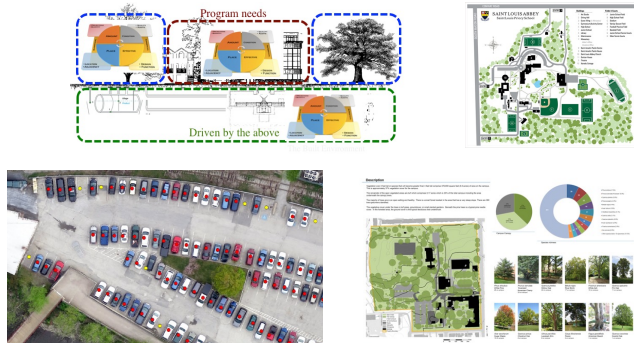
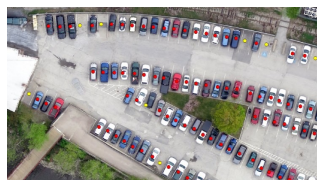

55



- PROCESS
- IMPORTANCE
- DEFINITIONS
- INVENTORIES
- MANAGEMENT
- PROGRAM NEEDS
- ANALYSIS
- TRENDS

Space Planning and Management

OUTSIDE SPACE ASSETS

56

