2002 Athletic Business Conference

Architectural Programming for Campus Recreation Facilities

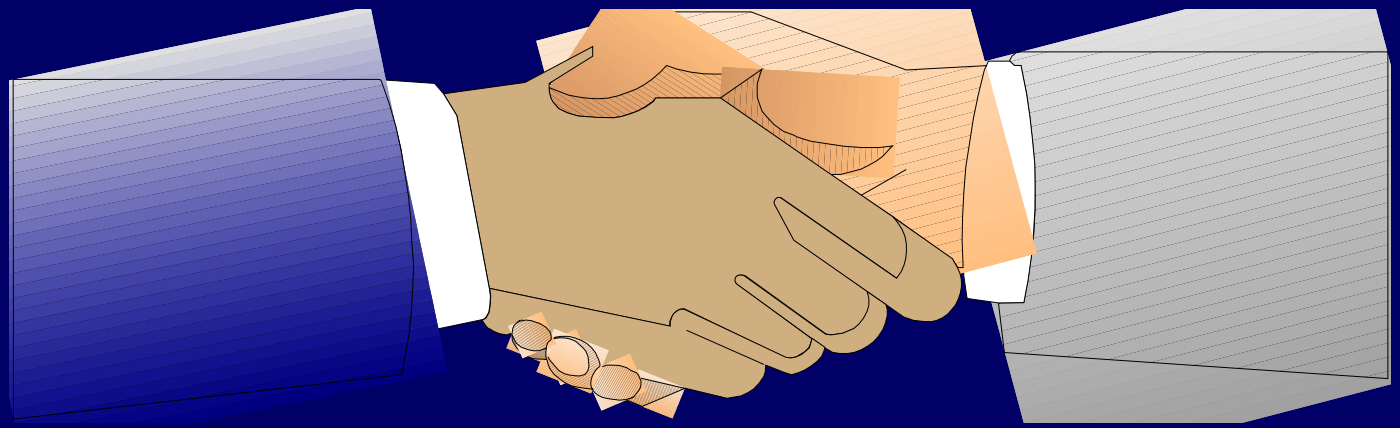
Presented By:

Paul Brailsford & Ann Drummie

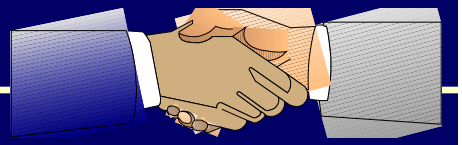
Presentation Outline

- Introduction
- Programming Basics
- Developing Your Program – Two Phases
- Q&A Throughout
- Wrap-up

Introduction



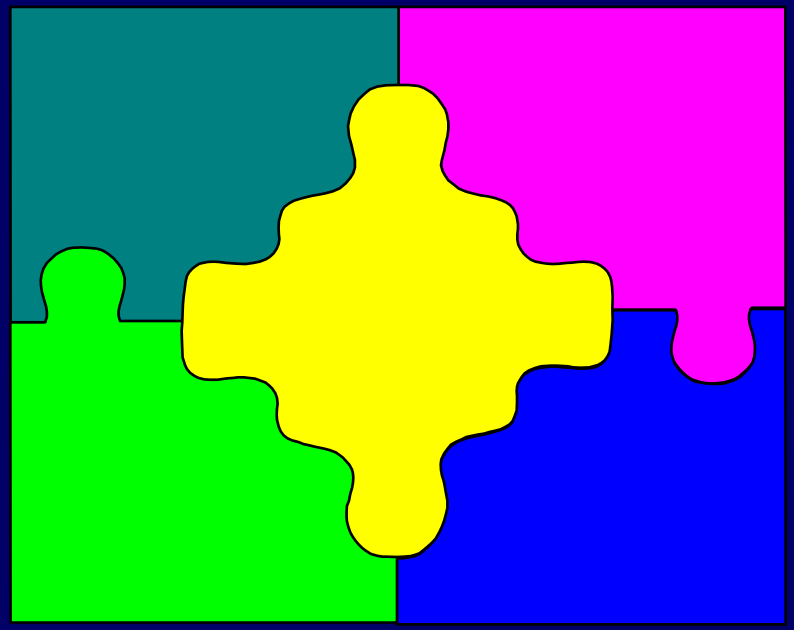
Introduction



Today's Speakers

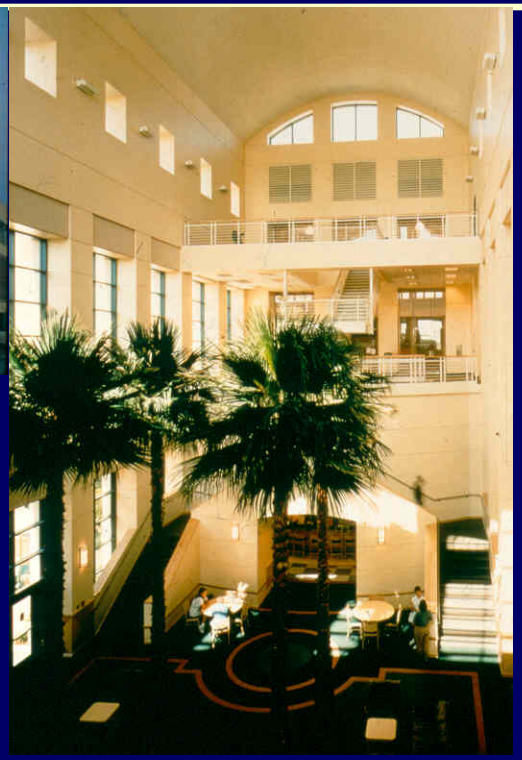
- Paul Brailsford - CEO, Brailsford & Dunlavey
  - Firm Has Worked on Over 100 Sports & Recreation Projects (ranging from 35,000 SF to over 500,000 SF)
  - Economics / Project Finance / Strategic Planning
  - Developed "Demand-based Programming" Methodology
- Ann Drummie – Associate, Brailsford & Dunlavey
  - Background in Architecture & Engineering
  - Design & Construction Management Experience
  - Author of Numerous Detailed Architectural Documents

Programming Basics



Programming Basics

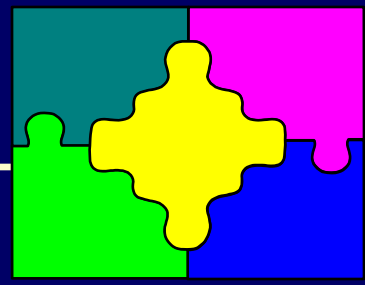
Tulane



Miami

Houston

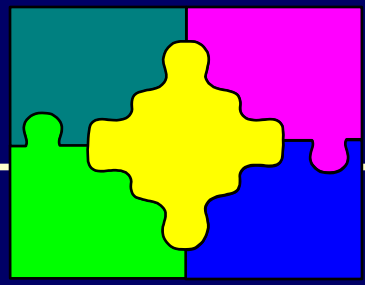
Programming Basics



About Design

"Design is an integrated and disciplined process of solving the problems and satisfying the requirements that are documented in the building program"

Programming Basics

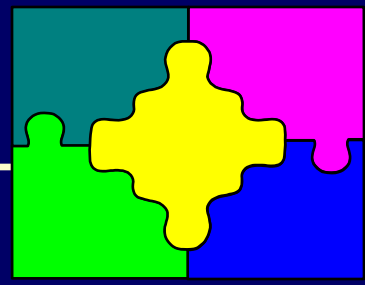


About Design

"Design is an integrated and disciplined process of solving the problems and satisfying the requirements that are documented in the building program"

Therefore, design is inextricably linked to a previous planning process called programming

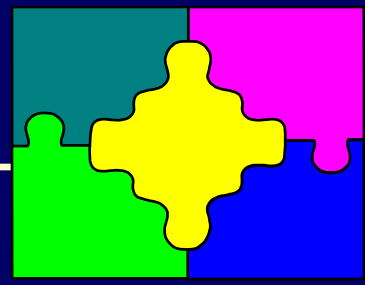
Programming Basics



What is Programming?

Programming is the iterative process of seeking, defining and documenting the problems that must be solved by the project's design team.

Programming Basics



What is Programming?

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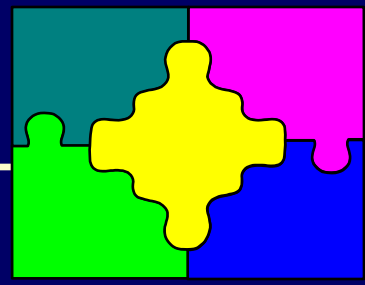
Problem Seeking?

What are we looking for and where do we start looking?

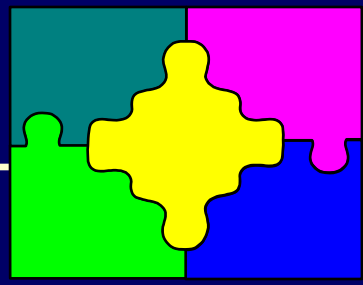
Programming Basics



What is a Recreation Center?

- Speculative Building
- Community Building
- Sports Facility
- Learning Center
- Business Operation
- Strategic Asset

Programming Basics



What is a Recreation Center?

- Speculative Building ⇨ Choice (market forces)
- Community Building
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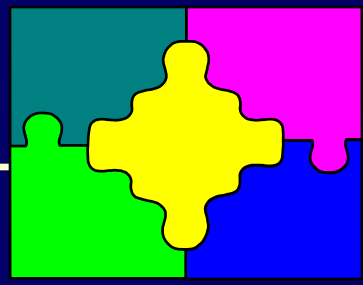
Programming Basics



What is a Recreation Center?

- Speculative Building
- Community Building ⇨ Shared Value (target markets)
- Sports Facility
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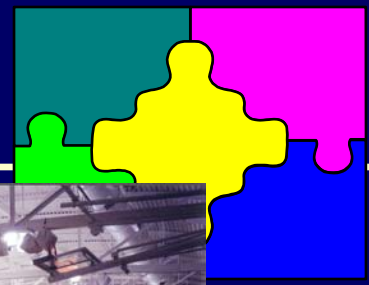
- Strategic Asset

Programming Basics



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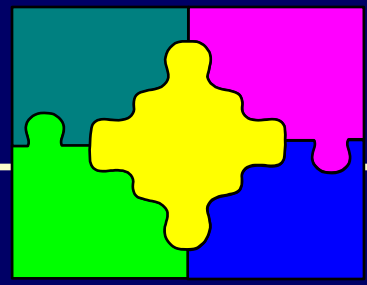
⇨ Technical Requirements

Programming Basics



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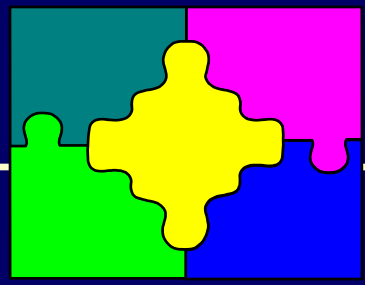
⇨ Definition? (options)

Programming Basics



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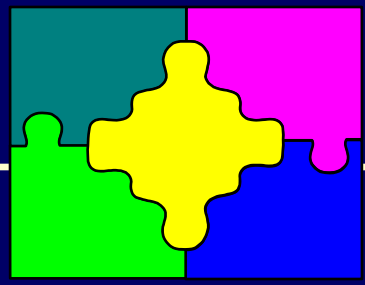
⇨ Efficiency (bottom line)

Programming Basics



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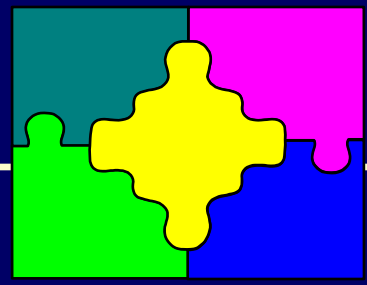
⇨ Mission (the reason)

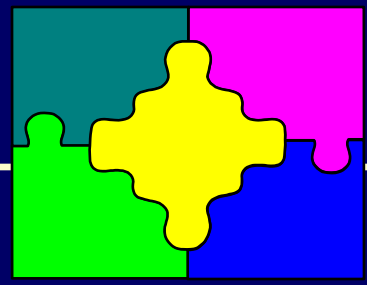
Programming Basics



What is a Recreation Center?

- Speculative Building ⇨ Choice (market forces)
- Community Building ⇨ Shared Value (target markets)
- Sports Facility ⇨ Tech. Requirements (priorities)
- Learning Center ⇨ Definition? (options)
- Business Operation ⇨ Efficiency (bottom line)
- Strategic Asset ⇨ Mission (the reason)

Programming Basics



What is a Recreation Center?

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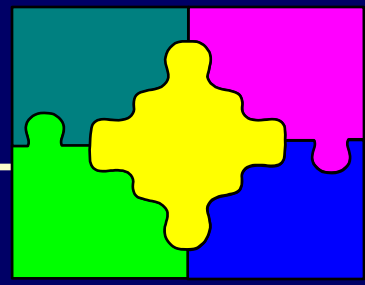
Programming is inextricably linked to market analysis, financial analysis, business planning & strategic planning

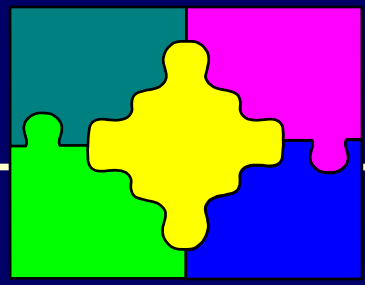
Programming Basics



The Risks of Not Developing a Program

- Improperly Sized Spaces
- Missing Program Elements
- Dysfunctional Adjacencies
- Scope / Quality / Budget Imbalances
- Schedule Delays
- Additional Architectural Services
- Flawed Performance Projections

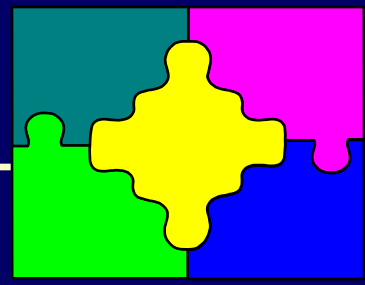
Programming Basics



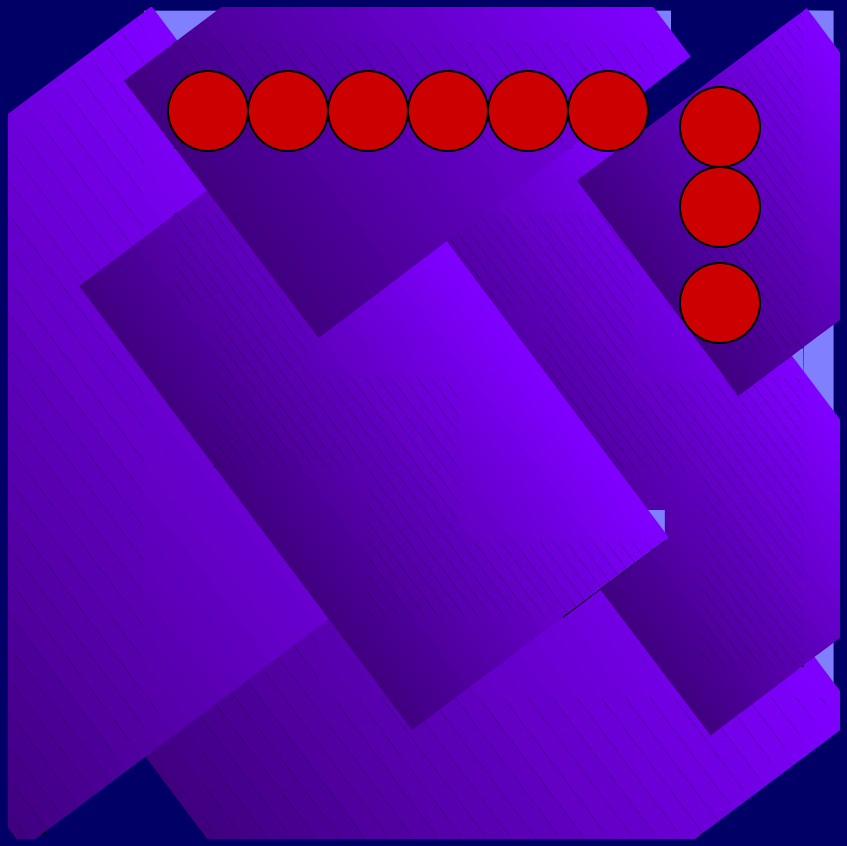
"Even if you're on the right track you'll get run over if you just sit there."

Will Rogers

Programming Basics

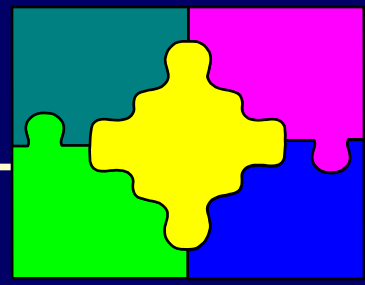


Reconciliation Process



- Concept / Mission
- Demand / Program
- Program / Site
- Program / Cost (budget)
- Cost / Debt Capacity
- Revenues / Expenses
- Program / Revenues
- Capacity / Revenues
- Debt Capacity / Expenses

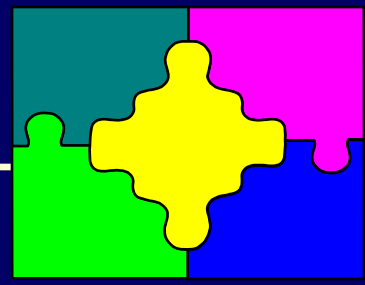
Programming Basics



Decision Requirements

- Mature Understanding / Preparation for Design
  - Concept /Scope
  - Quality / Standards
  - Operating Paradigm
  - Details, Details, Details
- Creating a Record / Implementation Realities
  - Changing Circumstances
  - Value Engineering
  - RFI's & Change Orders

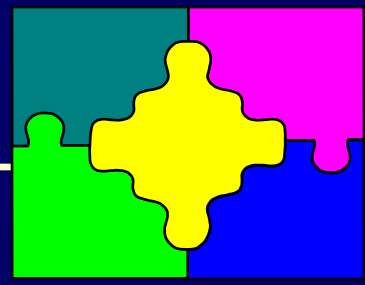
Programming Basics



Decision Strategy

1) Rules Governed Situation ⇨ Laws, Policies, Practices & Procedures
   - Check lists & research
   - Reason & compliance
2) Complicated Situation
3) Complex Situation
4) Chaotic Situation

Programming Basics

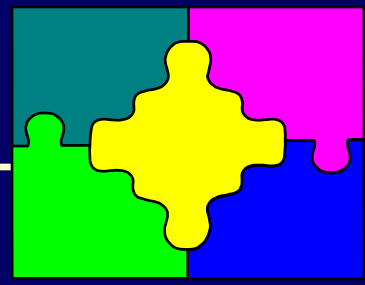


Decision Strategy

1) Rules Governed Situation
2) Complicated Situation ⇨ Everything is Knowable & Precision is Required
3) Complex Situation
4) Chaotic Situation

- Refined Judgment & Technical Expertise
- Design & Construction

Programming Basics

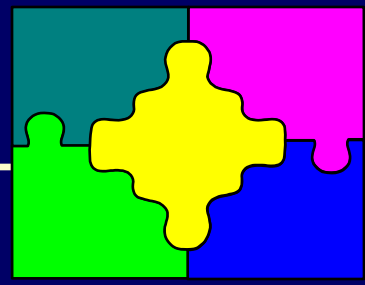


Decision Strategy

1) Rules Governed Situation
2) Complicated Situation
3) Complex Situation ⇨ Multiple Facets & Some Things are Unknowable
4) Chaotic Situation

- Markets, cultures & trends
- Data => Pattern Recognition & Instinct
- Concept Development

Programming Basics

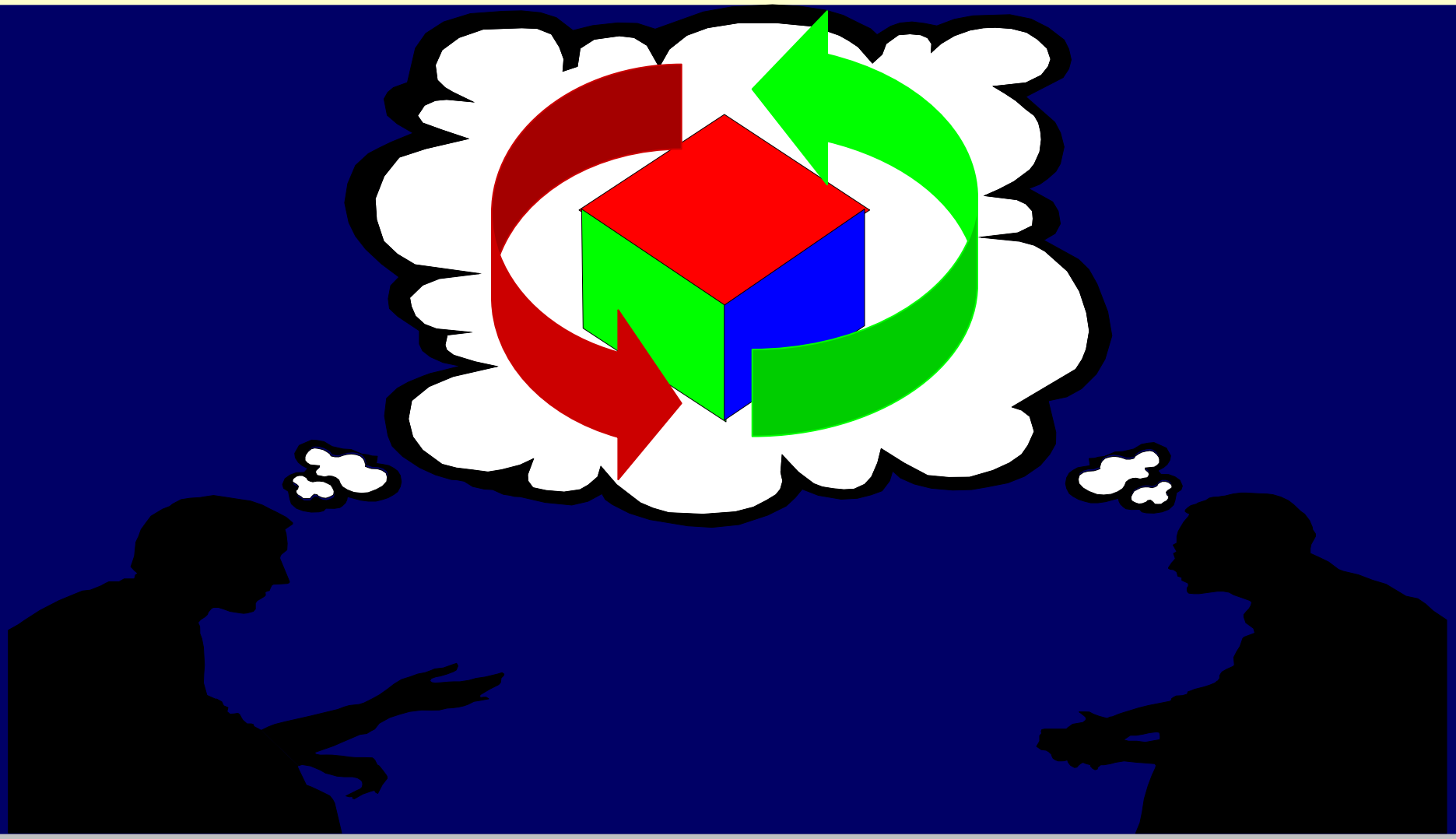


Decision Strategy

1) Rules Governed Situation
2) Complicated Situation
3) Complex Situation
4) Chaotic Situation ⇨ Political Uncertainty, Leadership Change, Other Changes in Circumstances

- Impose order & structure
- Mission, Objectives, Parameters

Developing Your Program



BRAILSFORD & DUNLAVEY

Developing Your Program

Segment Outline

- Outline Program
- Detailed Program of Requirements

Developing Your Program

Outline Program

- Terms & Documentation
- General Rules of Thumb
- Preliminary Feasibility Reconciliation
- The “Big Idea”
- Feasibility Phased Reconciliation

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
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- Support Zone

A discrete space to be created in the facility for a particular function:
ex. Director's Office
ex. 8 lane Pool

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

The amount of space required within the walls, for program elements to be functional.

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

The total amount of space required including the walls, corridors, mechanical services, washrooms etc.

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

The ratio of:
Net Assignable Square Feet to Gross Square Feet.

Ex. 70%

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

is comprised of spaces accessible to the general public such as the Lobby, and the Administrative Office Suite.

It should function such that access into the rest of the facility can be either permitted or denied based on the security controls present.

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

is comprised of the Activity Spaces such as: Weight & Fitness Room, Multipurpose Room, Gymnasium, Squash Courts, Climbing Wall.

These areas are accessible to students, faculty, staff, visiting teams and accompanied guests .

Developing Your Program

Outline Program - *Terms & Documentation*

- Program Element
- Net Assignable Square Feet
- Gross Square Feet
- Building Efficiency
- Free Zone
- Activity Zone
- Support Zone

is comprised of the Support Spaces such as: Locker Rooms, Laundry, Equipment Room..

It will be determined during design which of these spaces will be in the Free Zone and which in the Activity Zone as the functionality of the facility becomes defined.

Developing Your Program

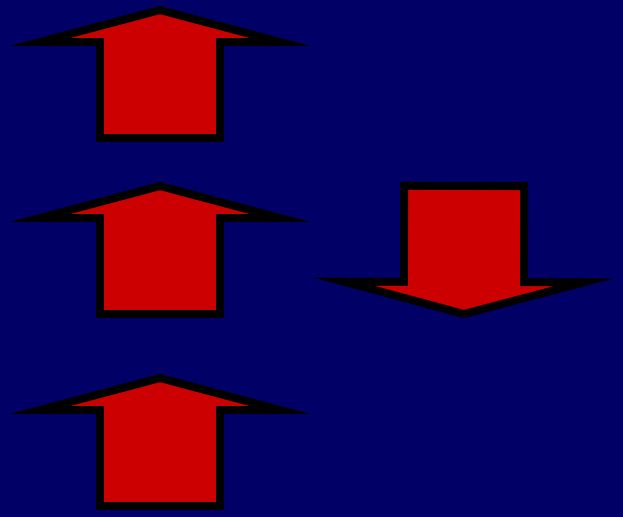
Outline Program - *General Rules of Thumb*

- 8.5 to 10.5 Gross Square Feet Per Student
  - Small Residential Campuses Are Higher
  - Large, Urban Non-traditional Campuses Are Lower
- Add 1 to 1.5 Gross Square Feet Per Employee
- Add 5 to 7.5 Gross Square Feet Per Alumni / Community Member
- Add for Non-redundant Academic & Athletic Spaces
- Subtract Usable Existing Spaces but Consider Sport Clubs & Efficiency of Existing Space

Developing Your Program

Outline Program - *General Rules of Thumb*

- 8.5 to 10.5 Gross Square Feet Per Student
  - Projected Enrollment Growth
  - Residential / Commuter Mix
  - Unique Cultural Considerations



Be Careful not to Undersize!

Developing Your Program

Outline Program - *General Rules of Thumb*

- Weight & Fitness = 1 Net Square Foot Per Student
  - Gender mix
  - Commuter mix
- Group Exercise = .5 Net Square Foot Per Student
  - Adjust for sport club and passive recreation use
  - Gender mix
- Wellness & Social Spaces are additional

Developing Your Program

Outline Program - *Preliminary Feasibility Reconciliation*

- Concept / Mission
- Demand / Program
- Program / Site
- Program / Cost (budget)
- Cost / Debt Capacity
- Revenues / Expenses
- Program / Revenues
- Capacity / Revenues
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Quick & Dirty Analysis

Developing Your Program

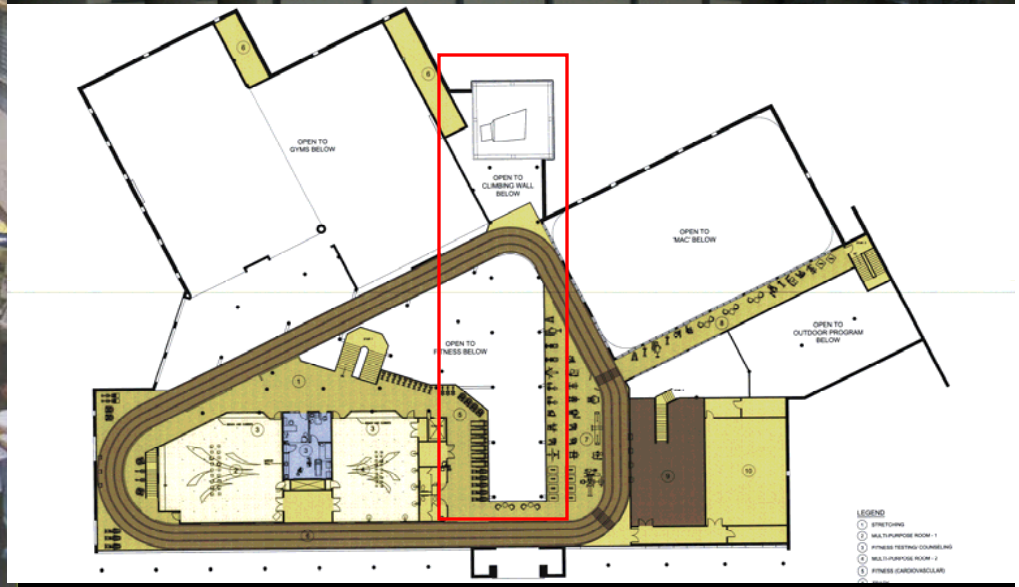
Outline Program - *The "Big Idea"*

- Unique to Your Campus
- Derived From Strategic Value
  - Mission
  - Cultural (campus or regional)
  - Related to Key Program Element
- Unlimited Shelf Life
  - Avoid Trendy Concepts
  - Celebrate Core Values & Commitments
  - Catalyst or Change Agent

Developing Your Program

Outline Program - *The "Big Idea"*

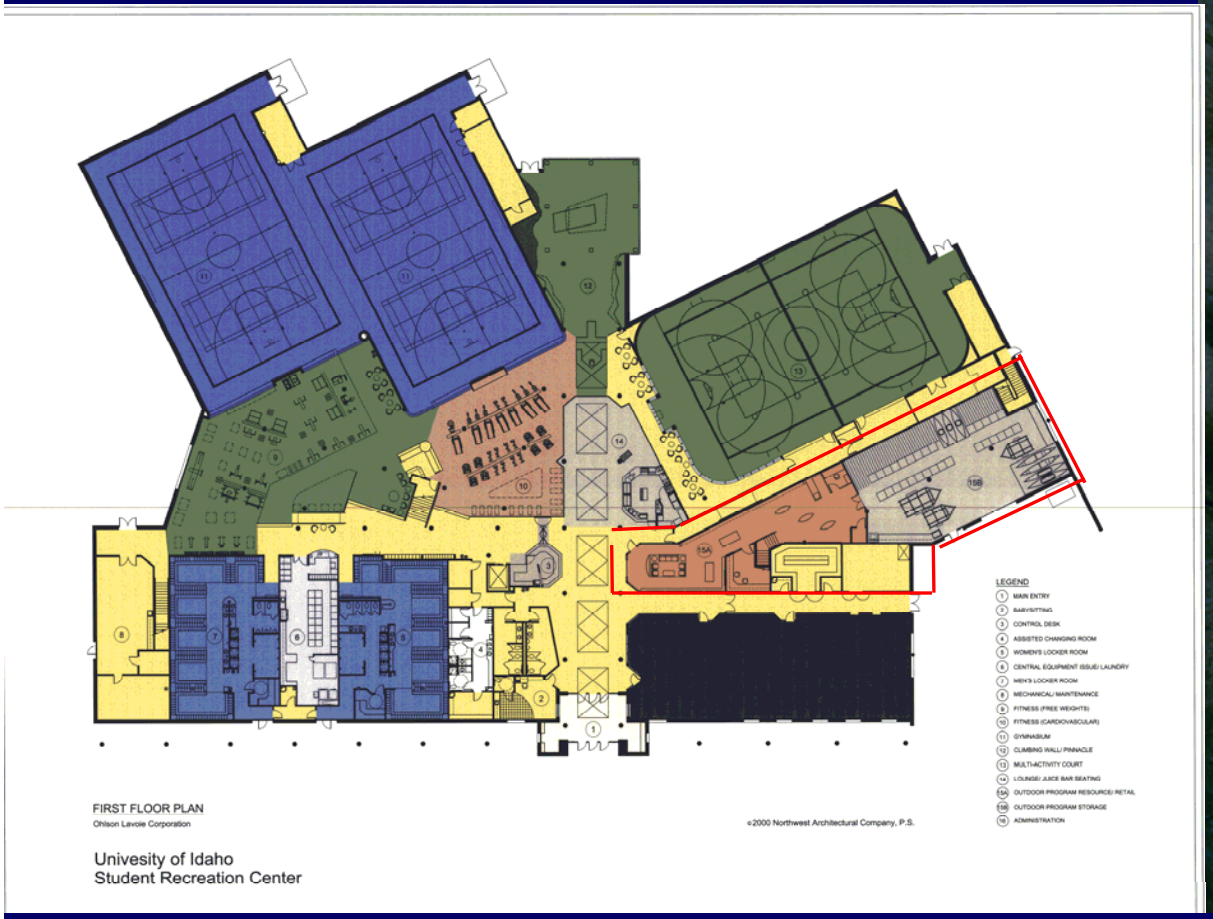
- University of Idaho
- University of Miami
- University of Houston



Courtesy of Ohlson Lavoie

Developing Your Program

Outline Program - *The "Big Idea"*



BRAILSFORD & DUNLAVEY

Developing Your Program

Outline Program - *The "Big Idea"*

Developing Your Program

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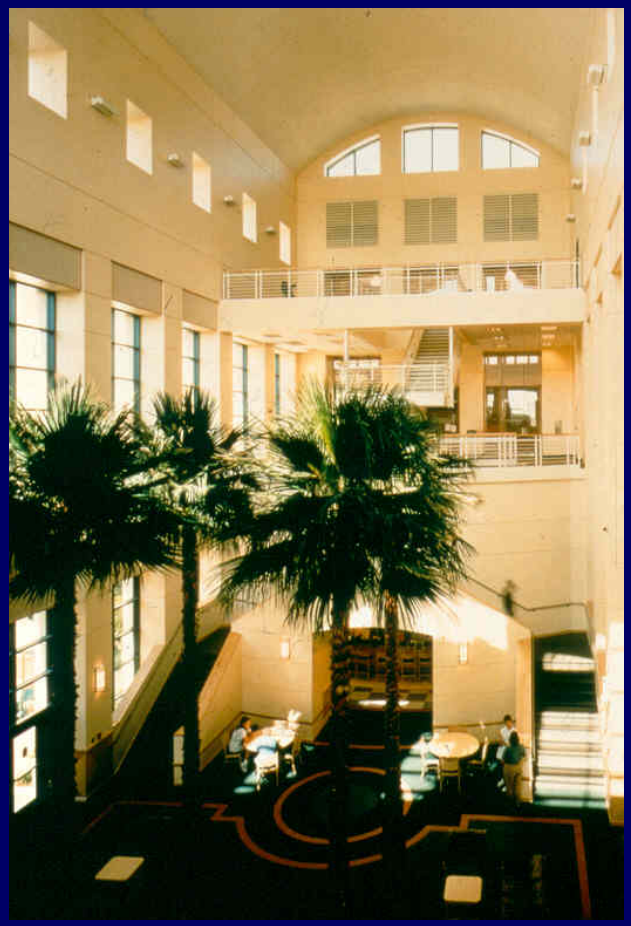

Developing Your Program

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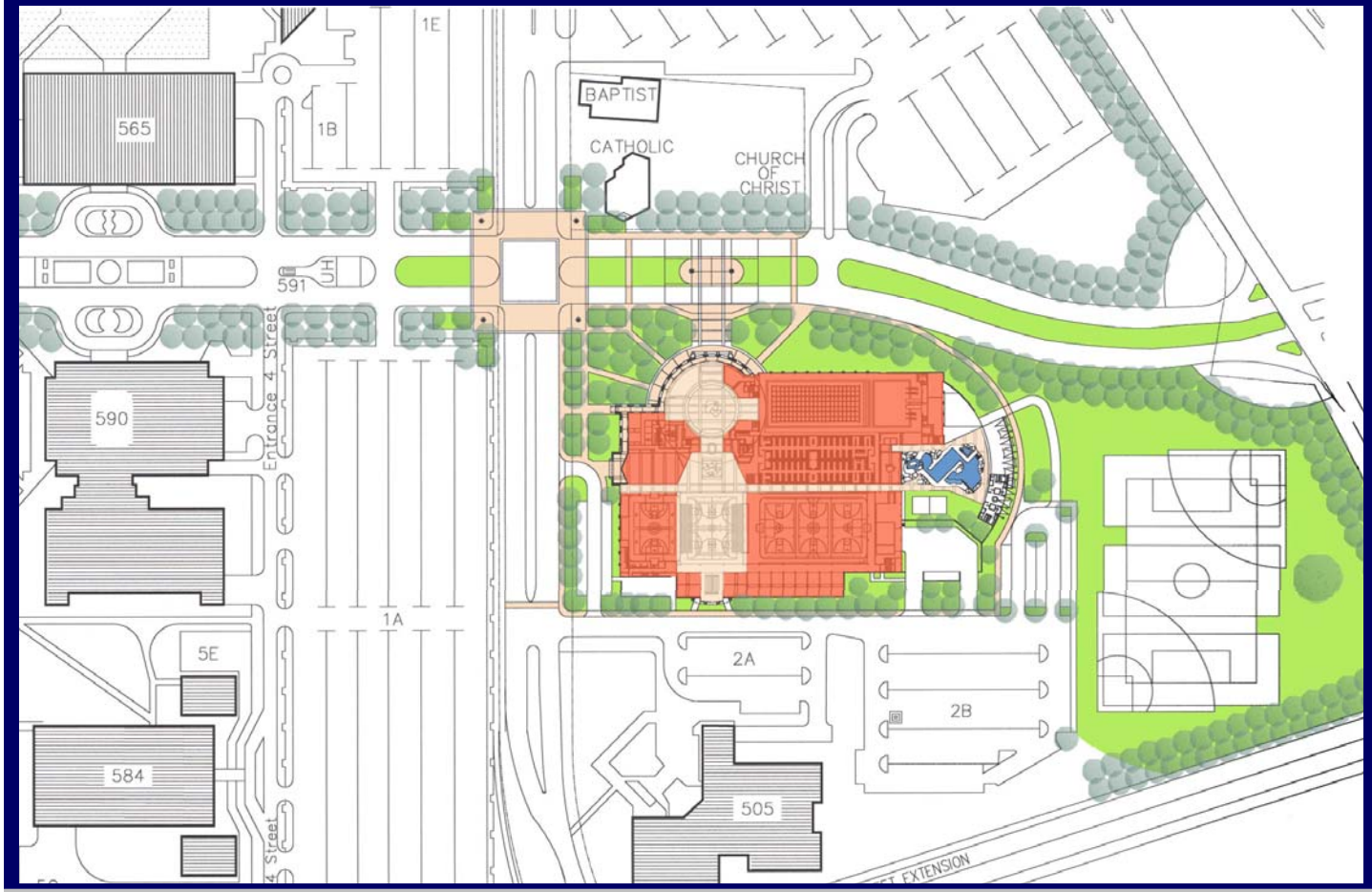

University of Houston

Developing Your Program

Outline Program - *The "Big Idea"*

University of Houston

Developing Your Program

Outline Program - *Feasibility Phase Reconciliation*

- Concept / Mission
- Demand / Program
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- Program / Cost (budget)
- Cost / Debt Capacity
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- Program / Revenues
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Developing Your Program

Outline Program - *Feasibility Phase Reconciliation*

- Demand-based Programming
- Site Reconciliation
- Detailed Financial Analysis
- Financial Underwriting

Developing Your Program

Market Analysis Techniques / Tools

1. Demographic Analysis
2. Focus Group Interviews ⇦ Use at least twice!
3. Intercept Interviews
4. Off-Campus Market Analysis
5. Competitive Context Analysis
6. Student Survey

Developing Your Program

Responding To Demand – Demand Based Programming

Student Responses

	Activity	Depth	Breadth	
1	WEIGHT MACHINES (NAUTILUS, CYBEX, ETC)	42.3%	72.7%	***1st Priority***
2	FREE WEIGHTS	41.0%	65.6%	
3	FITNESS (CARDIOVASCULAR MACHINES)	40.5%	68.0%	
4	AEROBICS (DANCE, SLIDE, STEP)	20.3%	51.2%	***2nd Priority***
5	INDOOR JOGGING OR WALKING	16.0%	53.5%	
6	BASKETBALL	15.6%	32.1%	
7	LAP SWIMMING	12.0%	39.3%	
8	RECREATIONAL OR LEISURE SWIMMING	9.3%	46.2%	
9	SPORT/CLIMBING WALL	8.7%	35.9%	
10	RACQUETBALL OR HANDBALL	7.7%	33.4%	
11	WATER AEROBICS	6.3%	30.0%	***3rd Priority***
12	VOLLEYBALL	6.2%	27.6%	
13	MARTIAL ARTS	5.7%	18.1%	
14	INDOOR SOCCER	5.3%	18.7%	
15	TENNIS	5.3%	10.2%	
16	ROLLER OR FLOOR HOCKEY	4.6%	8.1%	
17	BADMINTON	3.5%	6.0%	***4th Priority***
18	OTHER	3.1%	3.3%	

Developing Your Program

Responding To Demand – Demand / Program Reconciliation

	Activity	Priority Category	Peak Accommodation	Space Type	Peak Demand	Space Allocation Based on Prioritization of Demand
1	WEIGHT MACHINES (NAUTILUS, CYBEX, ETC)	first	75% to 85%	Sq. Ft.	4,252	3,200 to 3,600
2	FREE WEIGHTS	first	75% to 85%	Sq. Ft.	3,808	2,900 to 3,200
3	FITNESS (CARDIOVASCULAR MACHINES)	first	75% to 85%	Sq. Ft.	2,750	2,100 to 2,300
4	AEROBICS (DANCE, SLIDE, STEP)	second	55% to 65%	Sq. Ft.	3,470	1,900 to 2,300
5	INDOOR JOGGING OR WALKING	second	55% to 65%	Sq. Ft.	1,890	1,000 to 1,200
6	BASKETBALL	second	55% to 65%	Courts	8	4 to 5
7	LAP SWIMMING	third	40% to 50%	Lanes	7	3 to 4
8	RECREATIONAL OR LEISURE SWIMMING	third	40% to 50%	Sq. Ft.	2,890	1,200 to 1,400
9	SPORT/CLIMBING WALL	third	40% to 50%	Ln. Ft.	7	3 to 4
10	RACQUETBALL OR HANDBALL	third	40% to 50%	Courts	10	4 to 5
11	WATER AEROBICS	third	40% to 50%	Sq. Ft.	1,890	800 to 900
12	VOLLEYBALL	third	40% to 50%	Courts	2	1 to 1
13	MARTIAL ARTS	third	40% to 50%	Sq. Ft.	1,400	600 to 700
14	INDOOR SOCCER	third	40% to 50%	Courts	2	1 to 1
15	TENNIS	fourth	25% to 35%	Courts	280	70 to 98
16	ROLLER OR FLOOR HOCKEY	fourth	25% to 35%	Courts	1	0 to 0
17	BADMINTON	fourth	25% to 35%	Courts	3	1 to 1
	COMBINED WEIGHT & FITNESS (Fitness Machines, Free Weights and Weight Machines)				10,810	8,200 to 9,100

Developing Your Program

Detailed Program

- It's a Management Tool
- Documentation Overview
- Key Decision Areas
- Some Techniques

Addressed Concurrently

Developing Your Program

Detailed Program – *It's a Management Tool*

- Pre-design Cost Estimate
- Architect's Contract
- General Communication
- Fundraising Collateral
- Decision-making Record
- Value Engineering Guide
- RFI & Change Order Guide

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

I. Introduction
II. Project Objectives
III. Design Philosophy
IV. Site Requirements
V. Outline Program and Prioritization of Spaces
VI. Functional Relationships
VII. Program Element Data Sheets
VIII. Non-Assignable Elements & Miscellaneous
IX. Outline Specifications & Materials Palette

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

I. Introduction

An explanation of the organization

of the document and its role through

the facility development process.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

II. Project Objectives

A discussion of the Owner's overriding strategic objectives in developing the project.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

III. Design Philosophy

A description of the overall atmosphere and aesthetic which the design must endeavor to achieve, and the analysis from the feasibility study which determined space allocation decisions.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

IV. Site Requirements

A description and diagrams of the selected site explaining the major site-related and site-selection design considerations.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

V. Outline Program and Prioritization of Spaces

A space-by-space summary of the project's assignable program elements, and phasing and reduction strategies.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

VI. Functional Relationships

A matrix and diagram indicating the optimal spatial and visual adjacencies between identified program elements and their hierarchical importance.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

VII. Program Element Data Sheets

Detailed data sheets for each program element that contain a narrative description of the general functional requirements, space allocations and use requirements, and other information with respect to architectural, mechanical, and electrical requirements.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

VIII. Non-Assignable Elements & Miscellaneous

A listing of non-assignable program requirements (exterior elements, core elements or intangible requirements) included in the project's scope.

Developing Your Program

Detailed Program – *Documentation, Decisions & Techniques*

IX. Outline Specifications & Materials Palette

General standards for construction materials, building systems, accessibility, and code requirements.

Wrap-up

Wrap-up

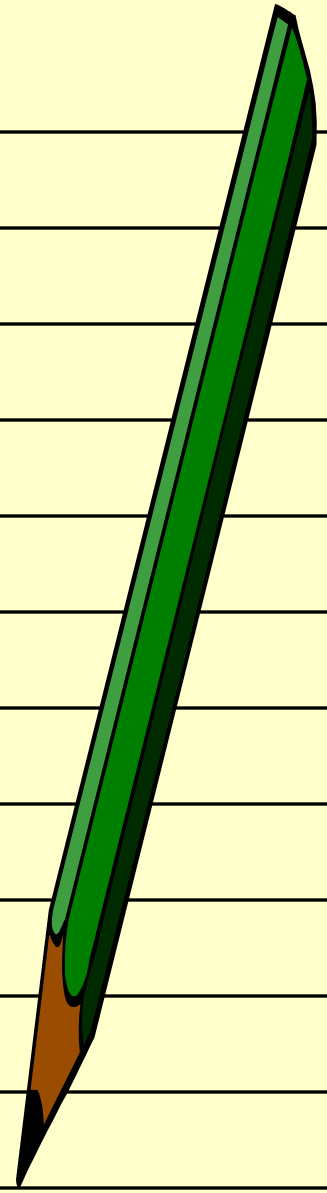
Key Points

- What Programming ISN'T
  - Conceptual Design
  - Means and methods of construction
  - Design or material stipulation
- What Programming IS
  - Powerful contractual tool to protect the Owner
  - Fundraising tool
  - Consensus building tool/Record of Decisions
  - Project Management/Quality Control/Communication tool
  - Schedule management tool
  - Budget management tool

2002 Athletic Business Conference

Architectural Programming for Campus Recreation Facilities

Presented By:

Paul Brailsford & Ann Drummie

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