VALIDATION OF LANDSCAPE DESIGNS

Conceptual Approaches and Techniques

The Concept

- Products, systems, structures all can and do fail to live up to their expectations
  - Poor design
  - Poor requirements
- Validating or testing designs and requirements is common across many different disciplines
  - Why?
    - Get it right
    - Reduce the cost of change and rework
    - Client satisfaction

Questions

- How can you validate a landscape design?
- Are there tools or techniques to use with a client to make sure the design will work and meet their expectations?
  - Virtual reality?
  - 3-D models?
  - Simulated walkthroughs?
- Is it practical and realistic?

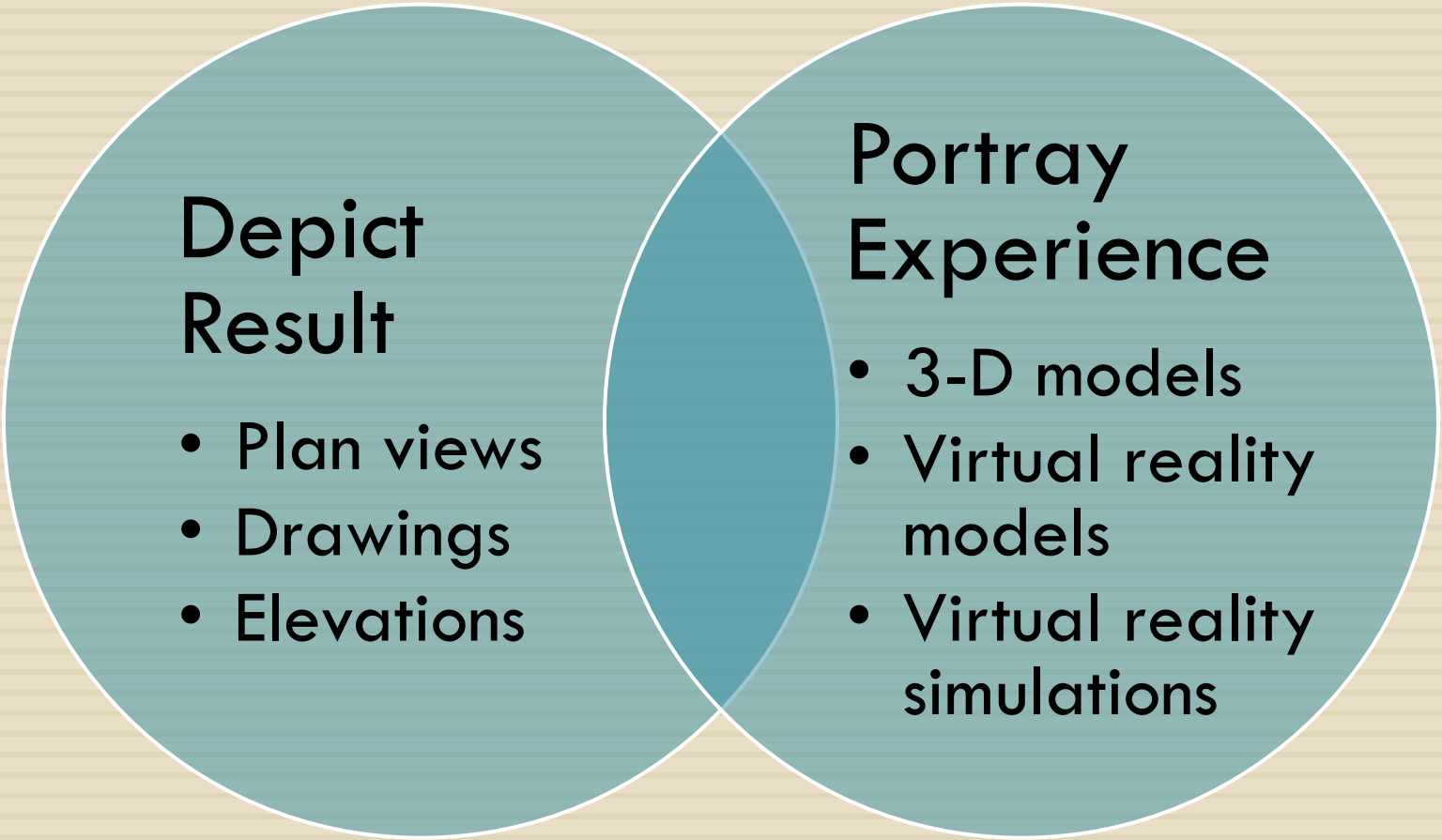
Verification versus Validation

- Verification = “You built (designed) it right”
  - Does the design properly reflects the specified requirements
  - i.e., the patio is 600 square feet as requested
- Validation = “You built (designed) the right thing.”
  - Will the design fulfill its intended use…”
  - i.e., the patio is large enough to address the entertaining needs of the client

Approach

- In-depth evaluation of Virtual Reality as a potential solution
- Survey of client needs gathering within local professional landscape community
- Evaluation of requirements gathering / analysis approaches and techniques

Landscape Design Visual Tools



Virtual Reality

- More than feasible
  - It exists
- Two major types: Immersive vs Non-Immersive
  - Non-Immersive (typically what is available on PC)
    - Useful for depicting / portraying
    - Lacking in depth to simulate client interaction with the space
  - Immersive useful for simulation of experiences
    - Need test “scenarios”
    - Need “scenario design tools”

What Virtual Reality Could Provide

- “Walk through” design
- Observe seasonal changes
- Observe year-to-year changes (growth)
- Experience usage scenarios
  - Utilization of space with various size gatherings
  - Space configuration change impact
  - “See” flow of use
  - “Step through” use of space

Virtual Reality Assessment

- Seems to answer the question or solve the problem but
  - Is it practical? Cost-effective?
  - How often would it really be necessary to go to that extent?
  - Need the client usage scenarios

Selected Survey Results

Respondents Demographics

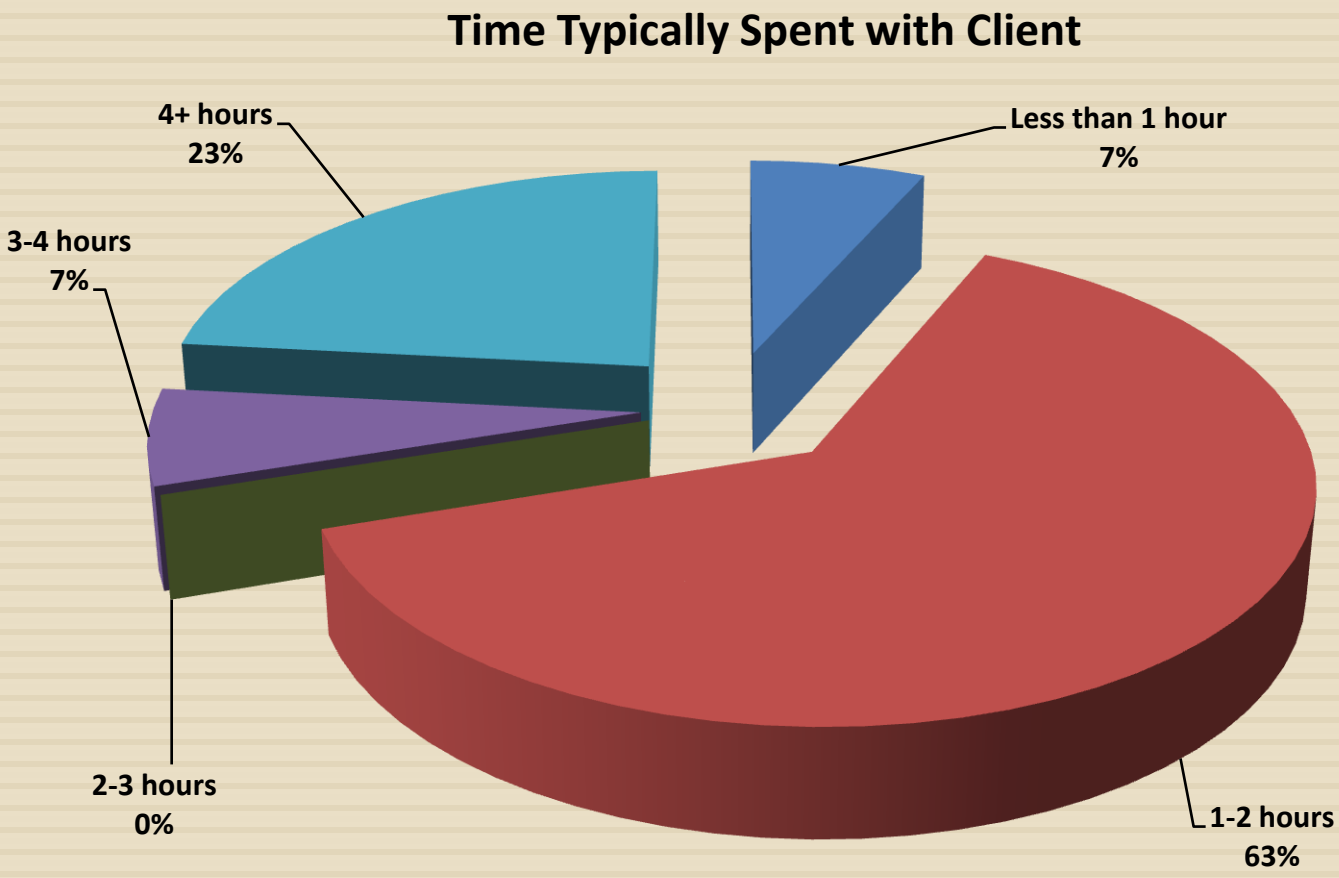
- **15 respondents**

- **1/3 individual or small firms(<10 staff)**
- **1/3 medium firms (11-25 staff)**
- **1/3 large firms**

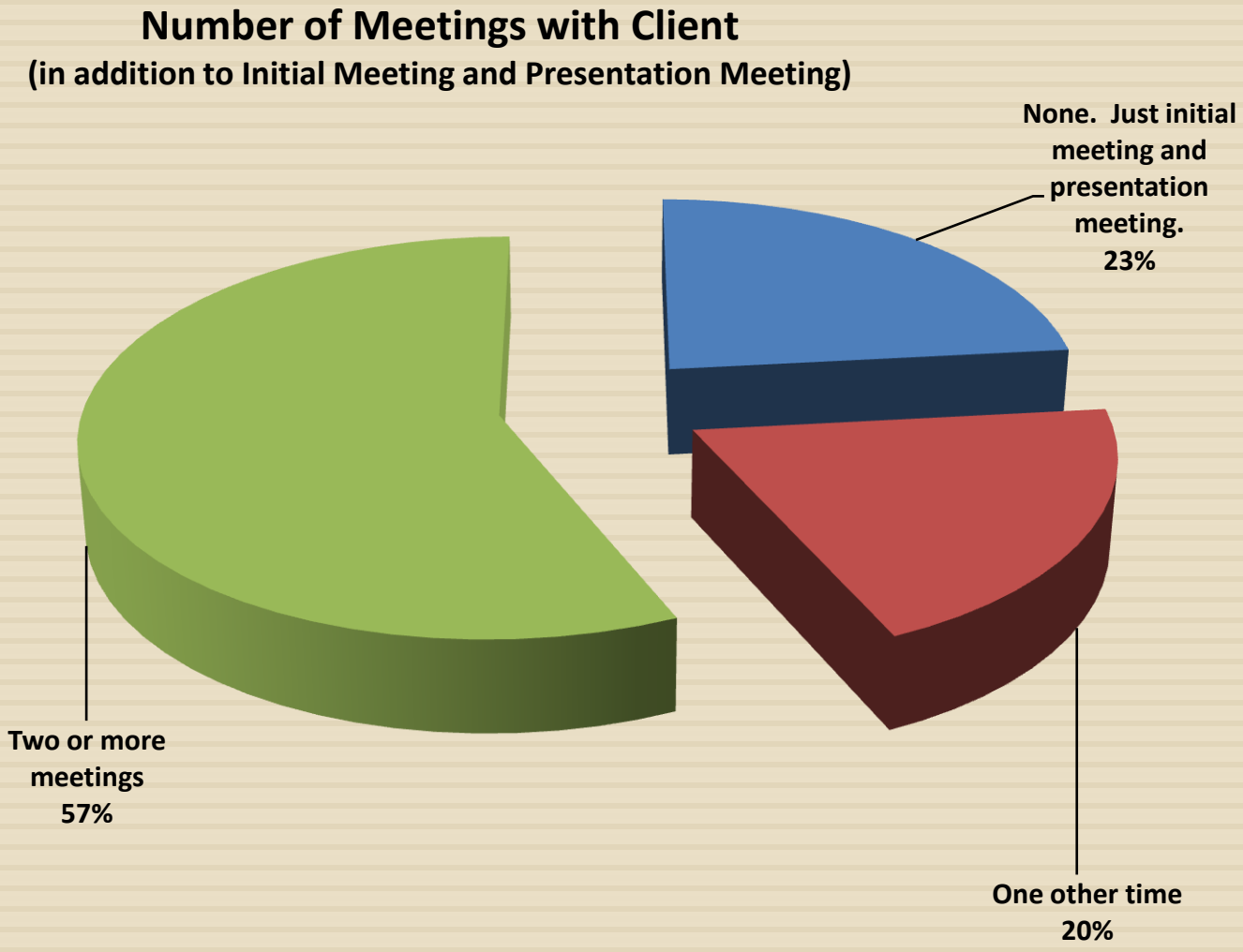
- **80% over 10 years experience**

- **47% design/build/maintenance**
- **37% design/build**
- **13% design only**

Client Time and Meetings

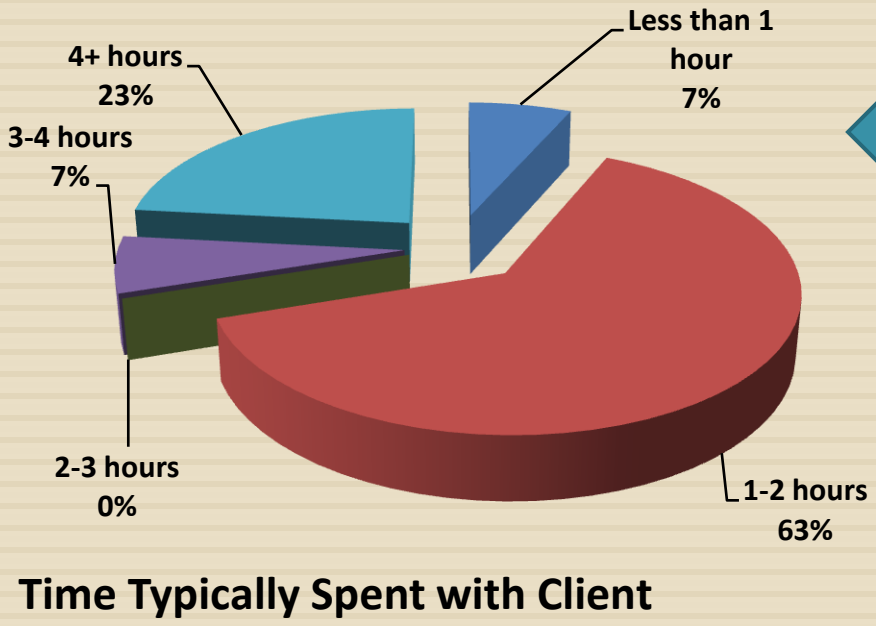


Client Time and Meetings



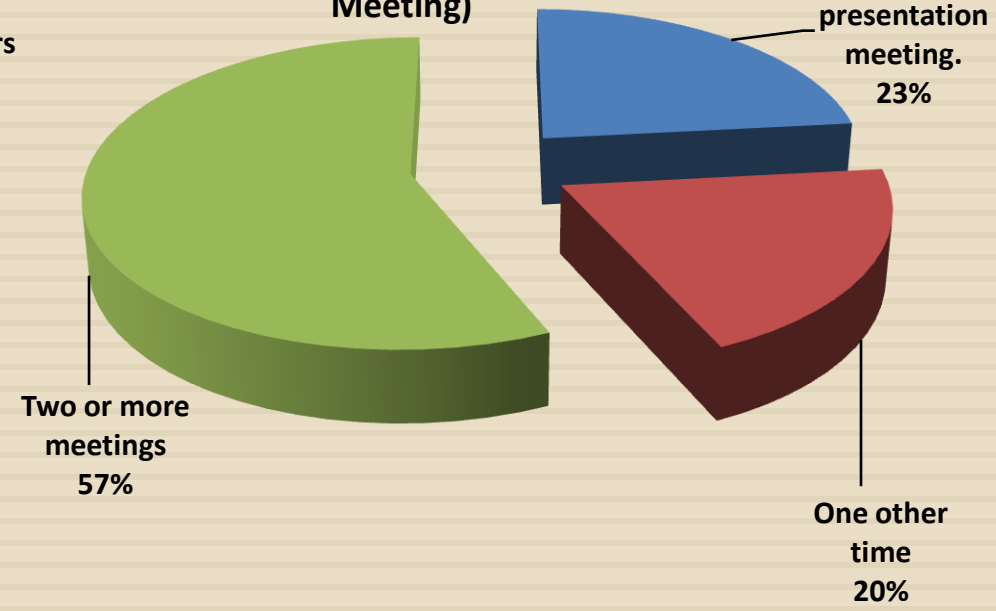
Client Time and Meetings

Time Spent vs # of Meetings?

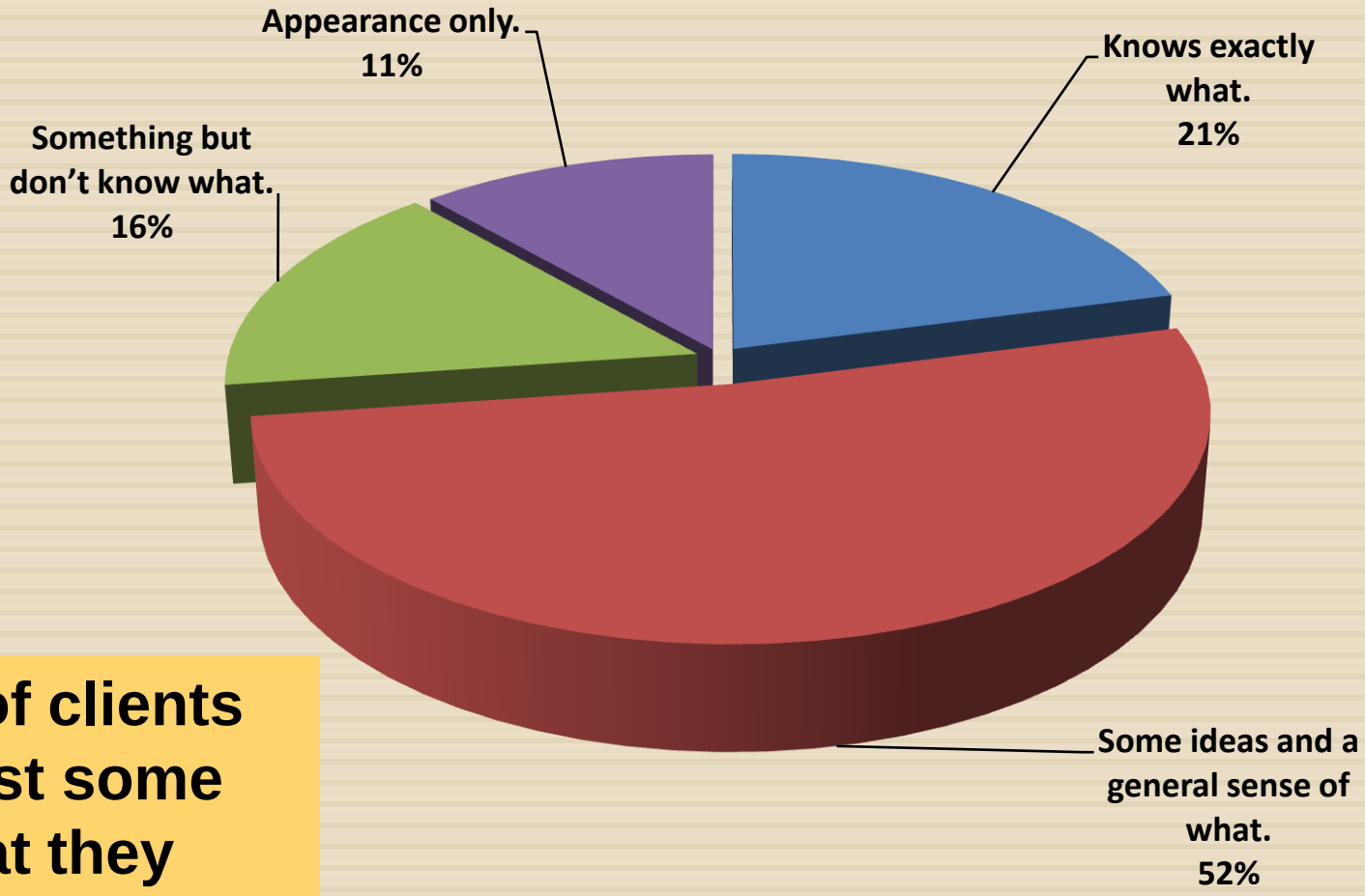


Time Typically Spent with Client

Number of Meetings with Client
(in addition to Initial Meeting and Presentation Meeting)

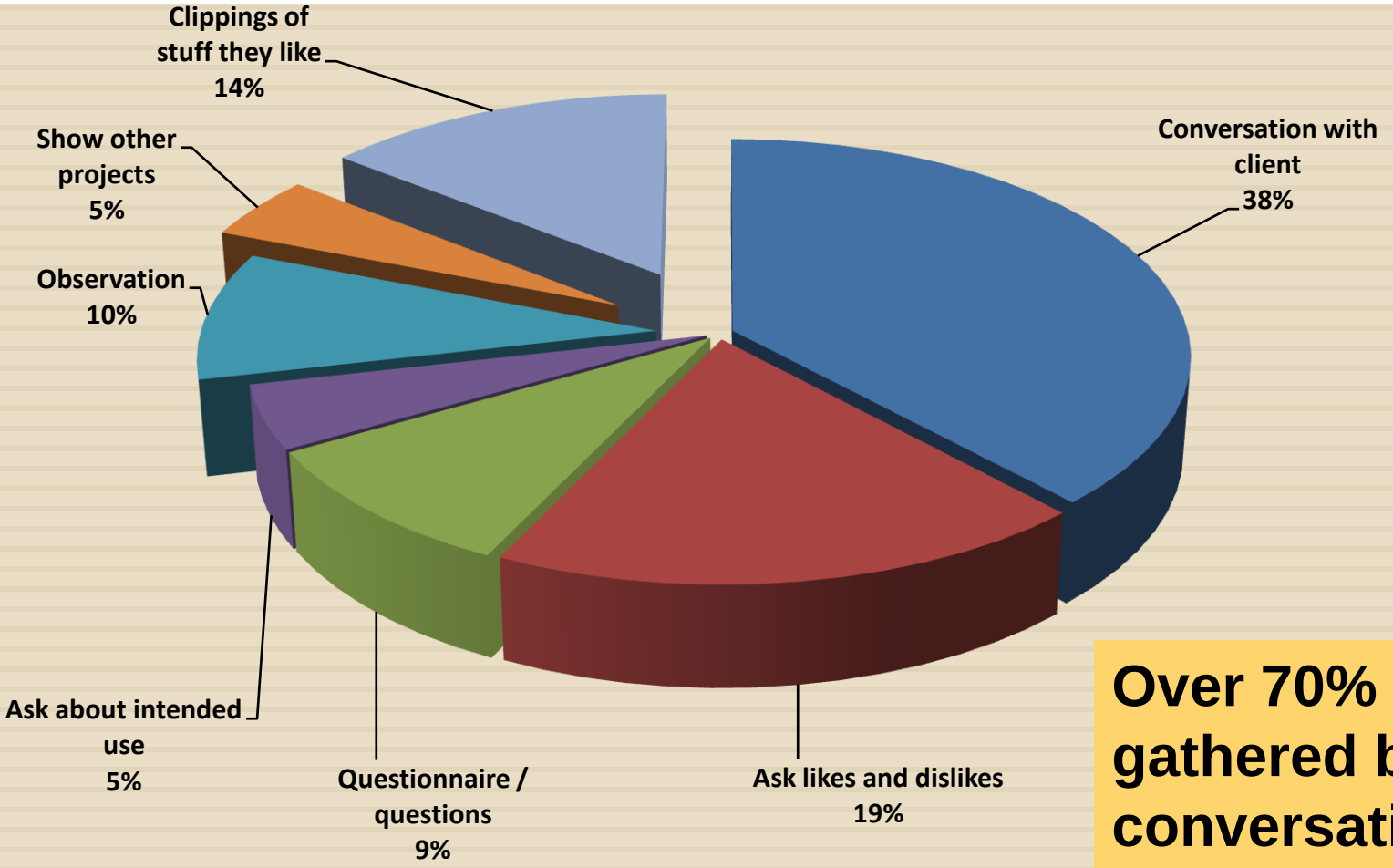


Client Self-Awareness Assessment



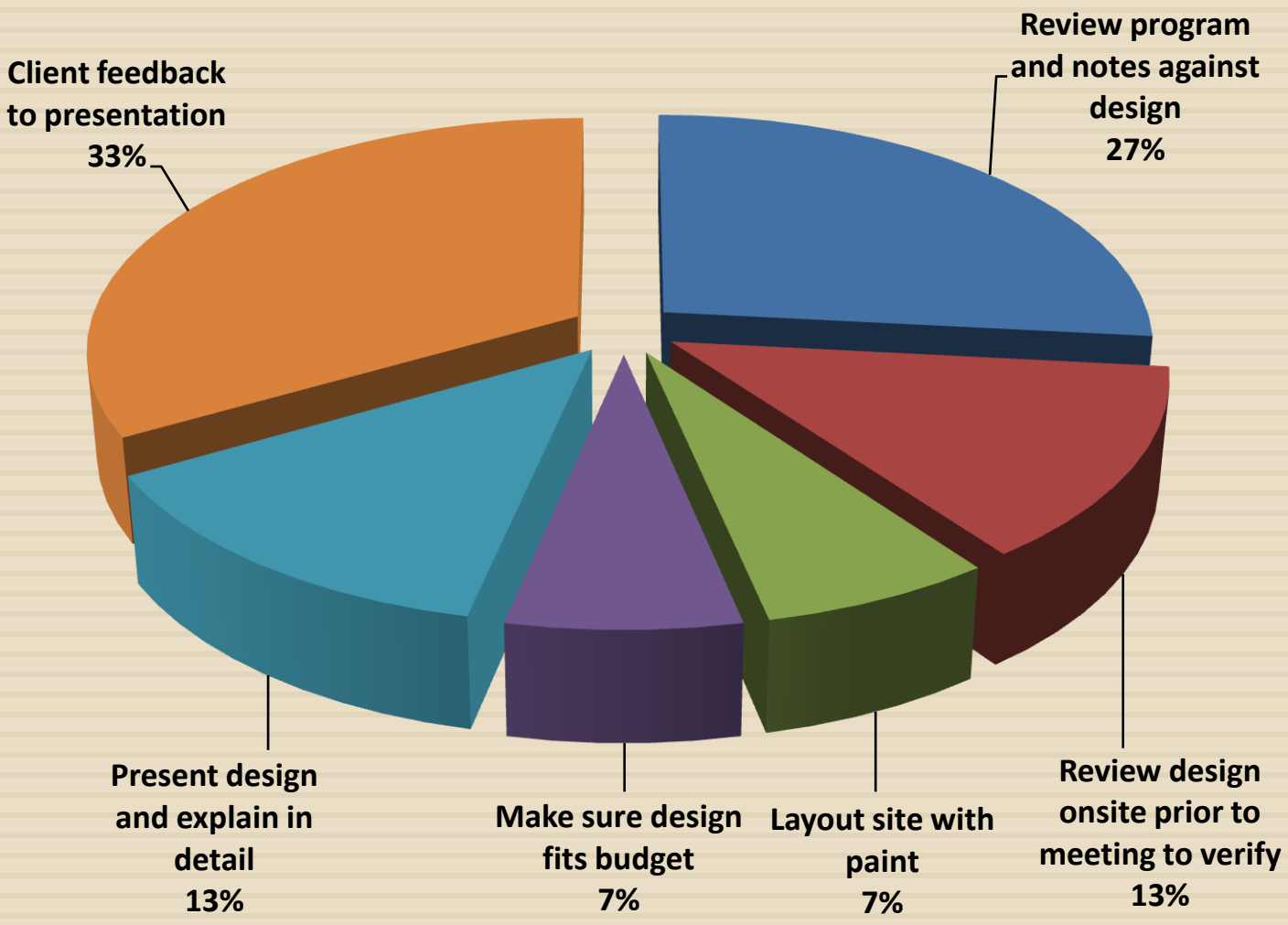
Over 70% of clients have at least some idea of what they want

Needs Gathering Methods Used

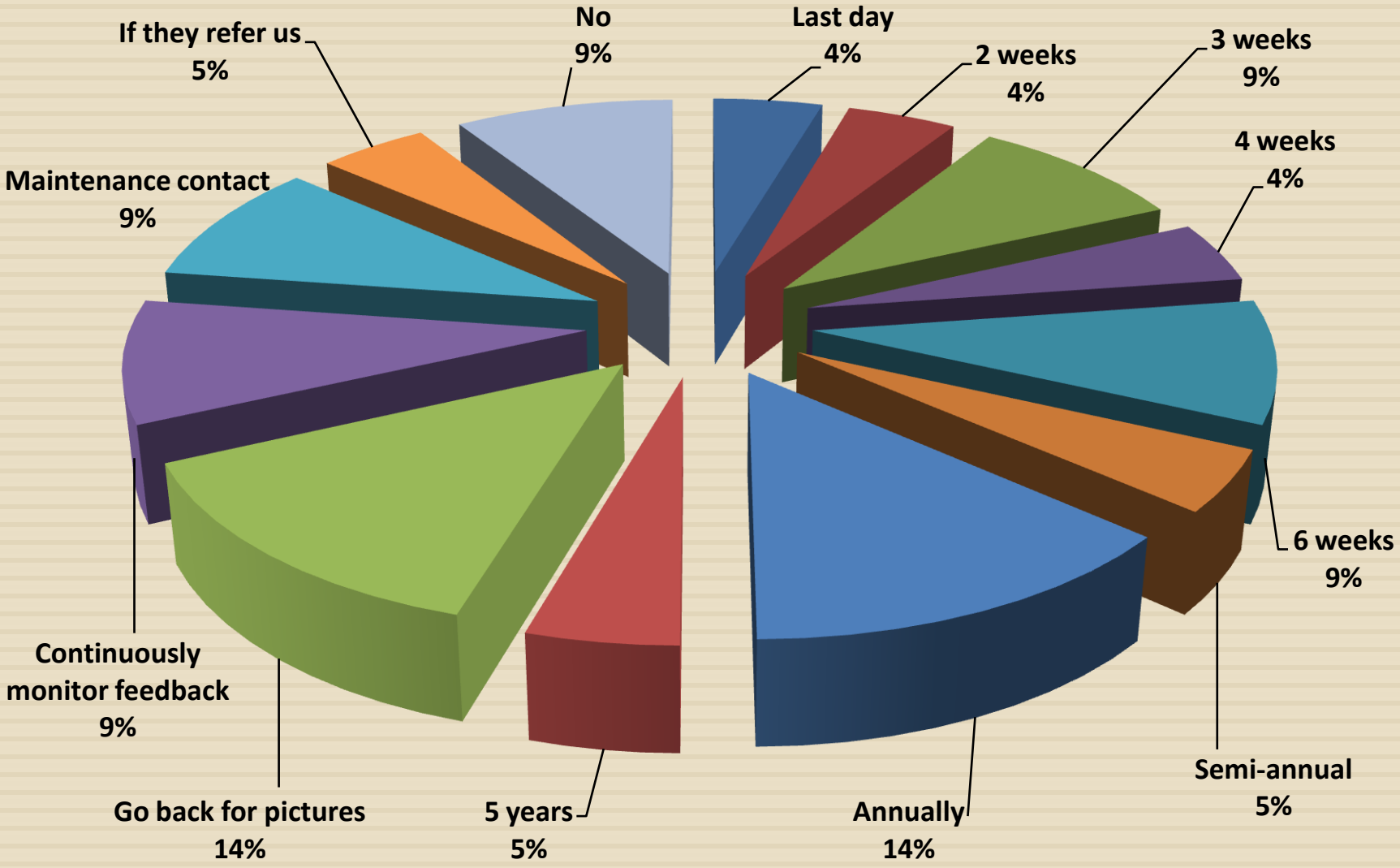


Over 70% of needs gathered by conversational methods

Validation Methods Used



Policy to Follow-up for Satisfaction



Survey Conclusions

- Much less time spent with clients than expected
  - Hours versus number of meetings?
- Majority of clients seem to know what they want
- Major needs gathering technique is conversation / questions / discussion
- Little use of “field trips” for idea generation
- Most common validation is reviewing design against notes and site
- Wide range of satisfaction follow-up practices

Application of Validation Methods

Best Practice Techniques

Technique	Need Discovery	Idea Generation	Communicating	Validating
Client Interview	☑			
Client Observations (casual & formal)	☑			
Questionnaire	☑			
Client Brainstorming Session	☑	☑		
Client Usage Scenario Reviews	☑	☑		
Portfolio or Literature Review		☑	☑	
Storyboards			☑	
Client Tour / Field Trip (hardscape, softscape, & similar spaces)		☑	☑	☑
Preliminary Design		☑	☑	☑
Client Design Walkthrough			☑	☑
Drawings / Sketches		☑	☑	☑
Digital Images (mock-ups)		☑	☑	☑
Physical Scale Models		☑	☑	☑
3-D Virtual Designs / Models		☑	☑	☑

Application of Best Practices

Application of Best Practices

- Gathering the needs or requirements is crucial
  - Understand the client completely
    - Values / Goals / Expectations
    - Get the right needs
    - Get all of the needs
    - Get client priorities
  - Gather facts
    - Site
    - Client
    - Context
  - Identify Issues

Application of Best Practices

Identify Facts

Site

- Climate
  - Degree days
  - Precipitation
  - Solar exposure
  - Wind speed & directions
- Codes
  - Building
  - Zoning
- Site conditions
  - Geology
  - Hydrology
  - Noise
  - Odors
  - Site features
  - Topography
  - Utilities
  - Views

Client

- Activity analysis
- Age group
- Disability
- Environmental
- Numbers of people / groupings
- Perceptual abilities
- Personality
- Roles
- Rules
- Values

Context

- Community
- Cultural
- Demographic
- Economic
- Ethnic
- Historical
- Regional
- Social

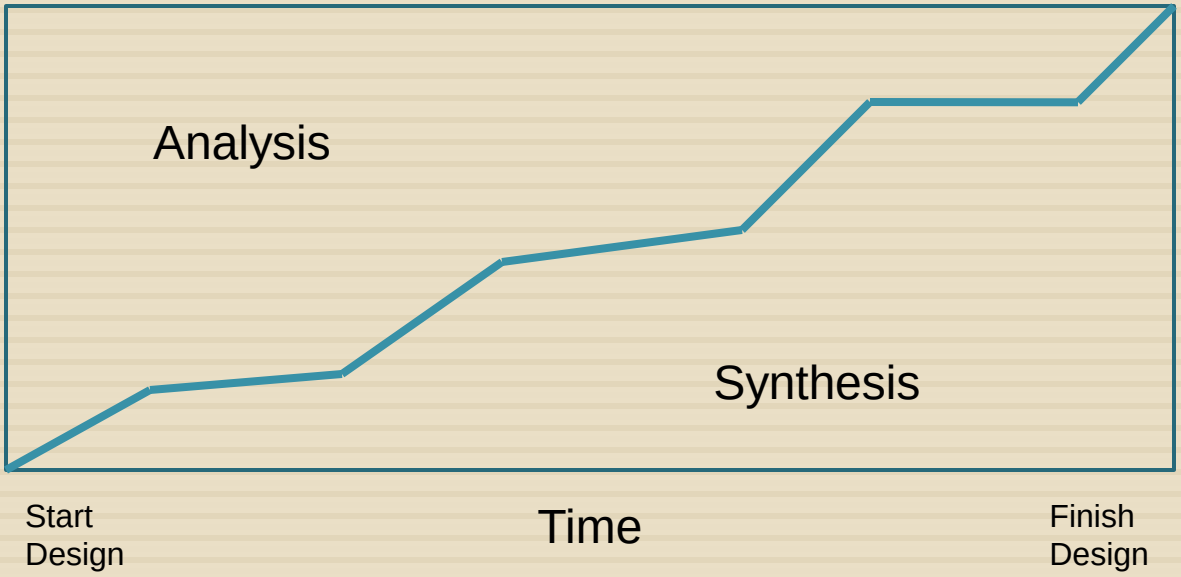
Application of Best Practices

Identify Issues

- Circulation
- Comfort
  - Physical
  - Psychological
- Convenience
- Durability
- Economy
- Energy efficiency
- Environmental impact
- Flexibility
  - Adaptability
  - Choice/variety
  - Expansion/contraction
  - Multi-use
- Image
- Interaction
- Maintenance
- Mood/ambiance
- Olfactory
- Personalization
- Privacy
- Resource management
- Safety / Security
- Visibility

Application of Best Practices

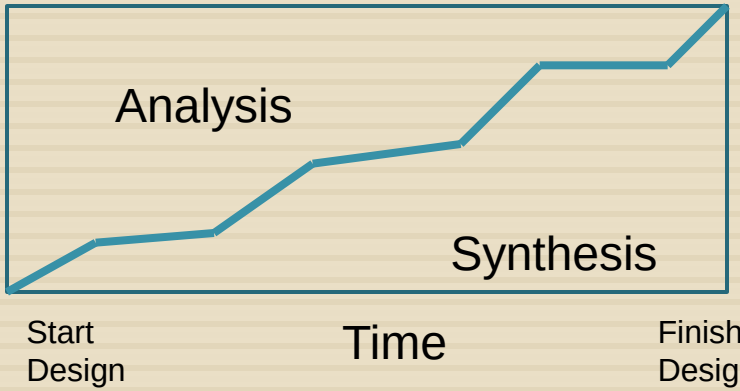
- Gathering the needs or requirements is crucial
- Information gathered needs to be documented and synthesized
  - Gradual transition from analysis to synthesis over the development of the design



Application of Best Practices

- Gathering the needs or requirements is crucial
- Information gathered needs to be documented and synthesized
- Documentation of the analysis creates value
  - Demonstrates thought and shows value
  - Provides a basis for tying together needs and design

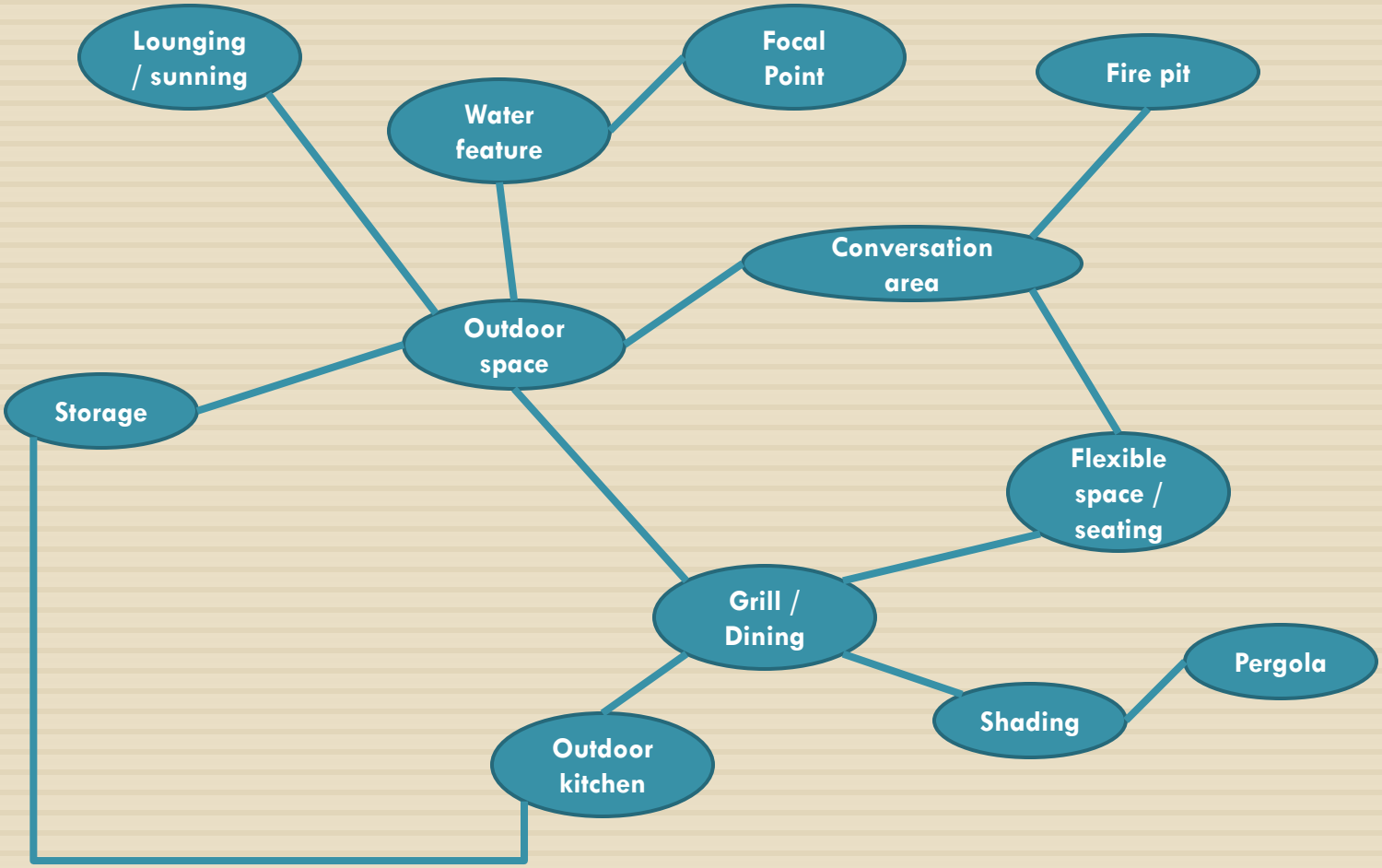
Use materials created during this process to
- Validate
- Show value
- Demonstrate thought process



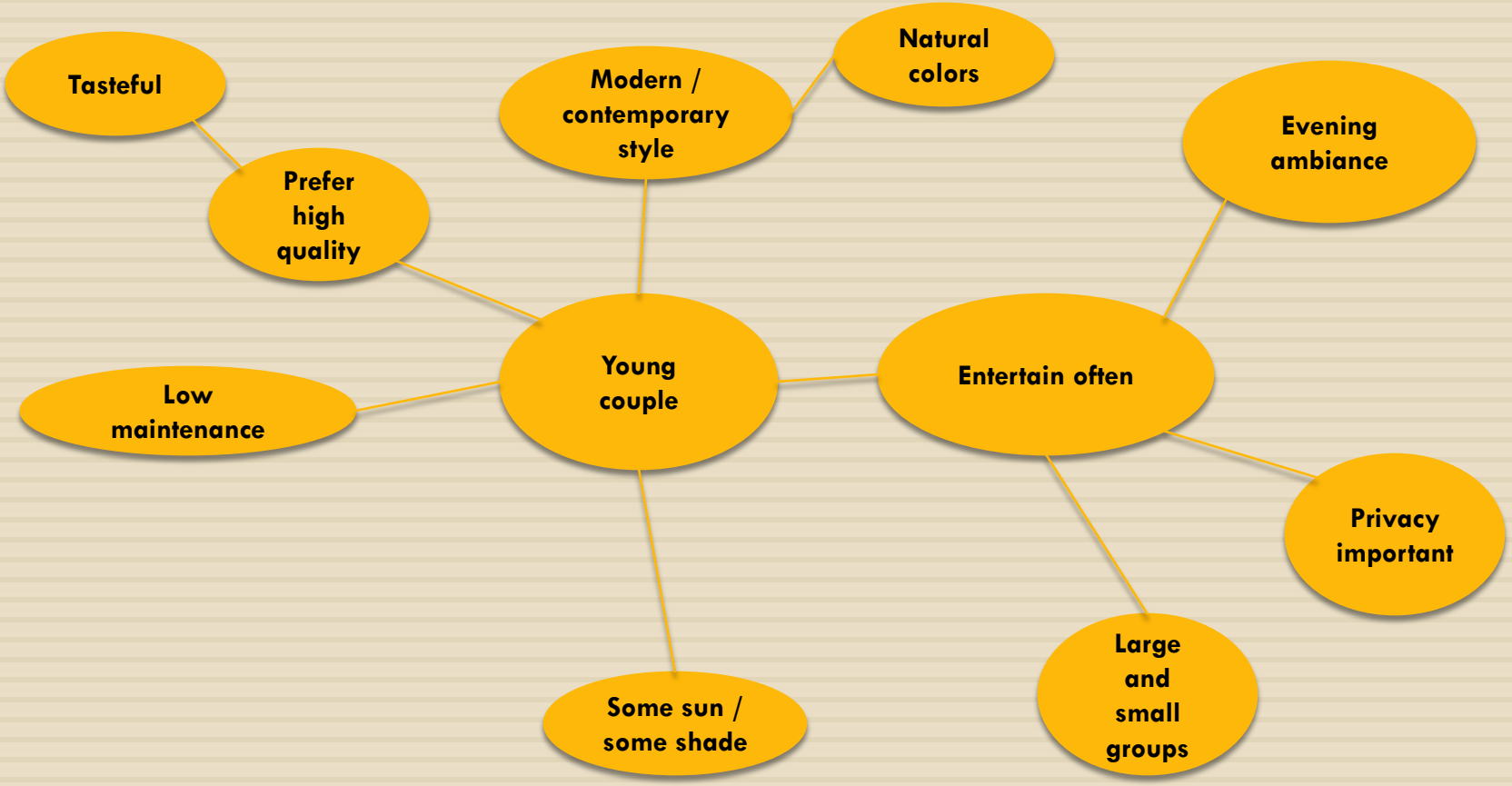
Techniques Examples

- Project: Create a 600 sq ft outdoor experience
  - Grilling
  - Dining
  - Conversation
  - Lounging
  - Water feature sights and sounds
  - Fire pit ambiance
  - Storage space

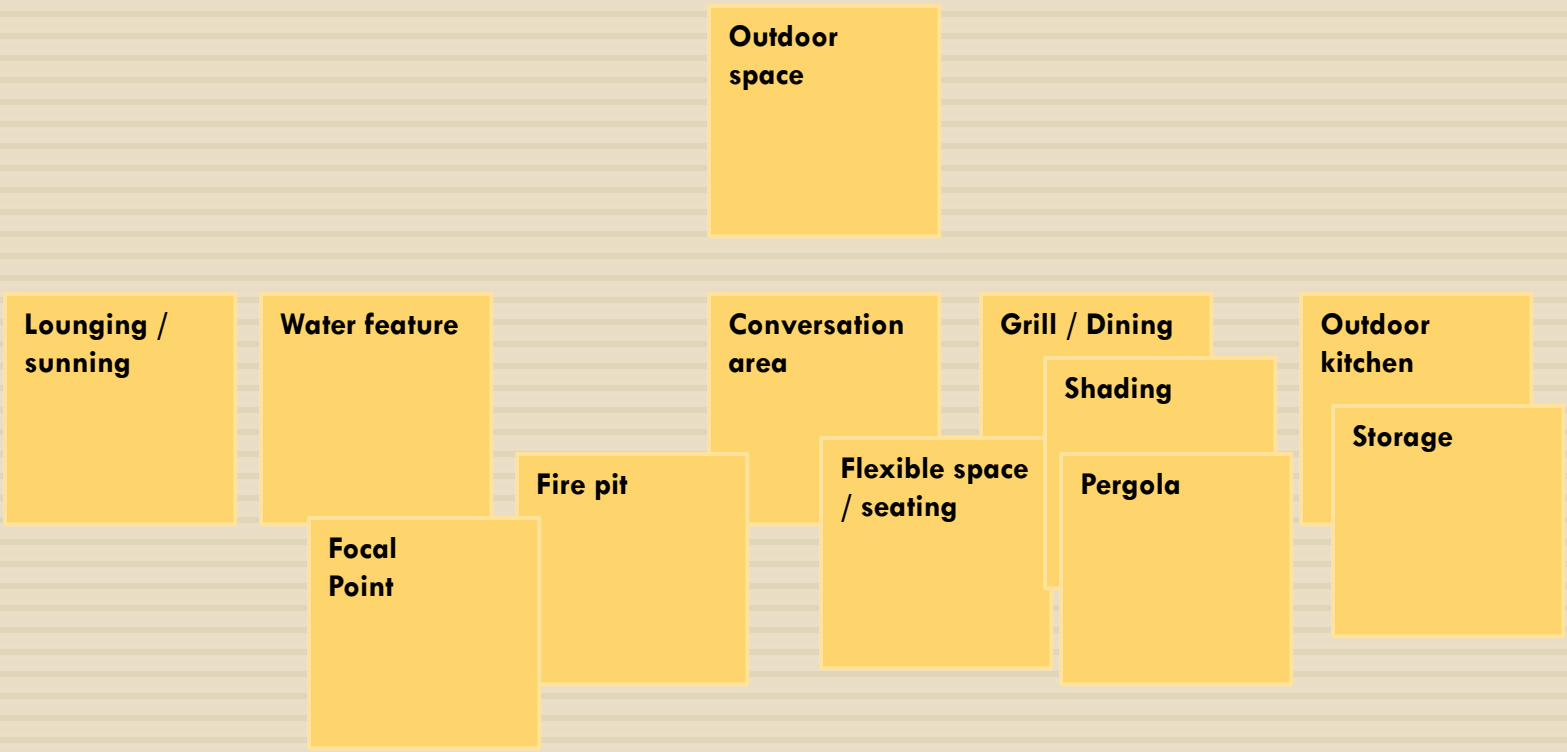
Mind-Mapping



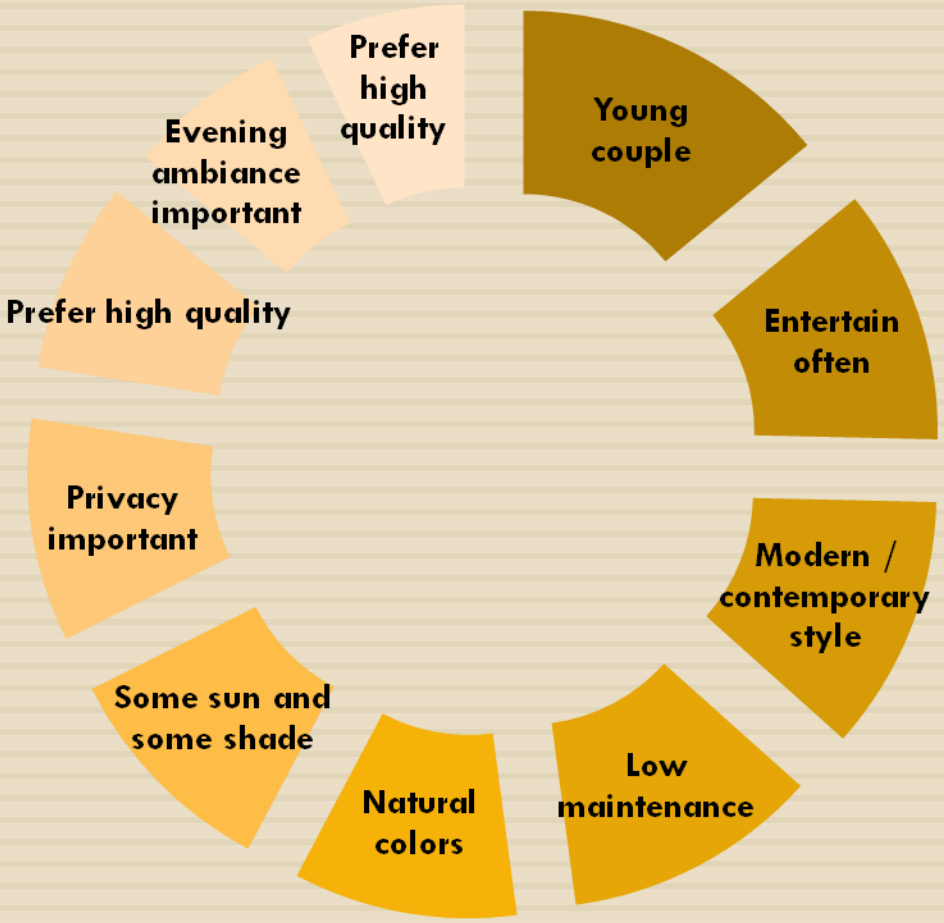
Mind-Mapping



Card Sorting

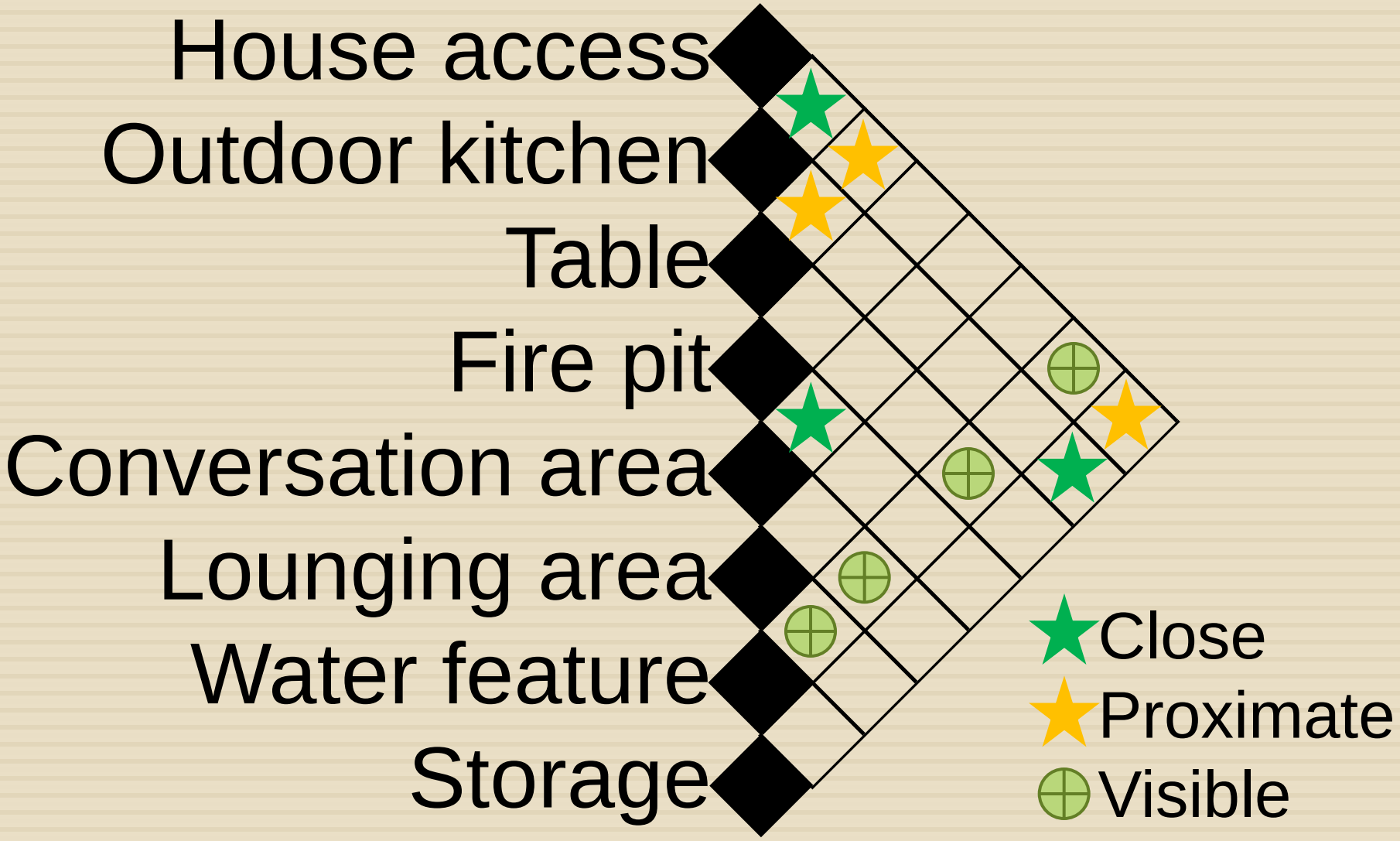


Client Profile



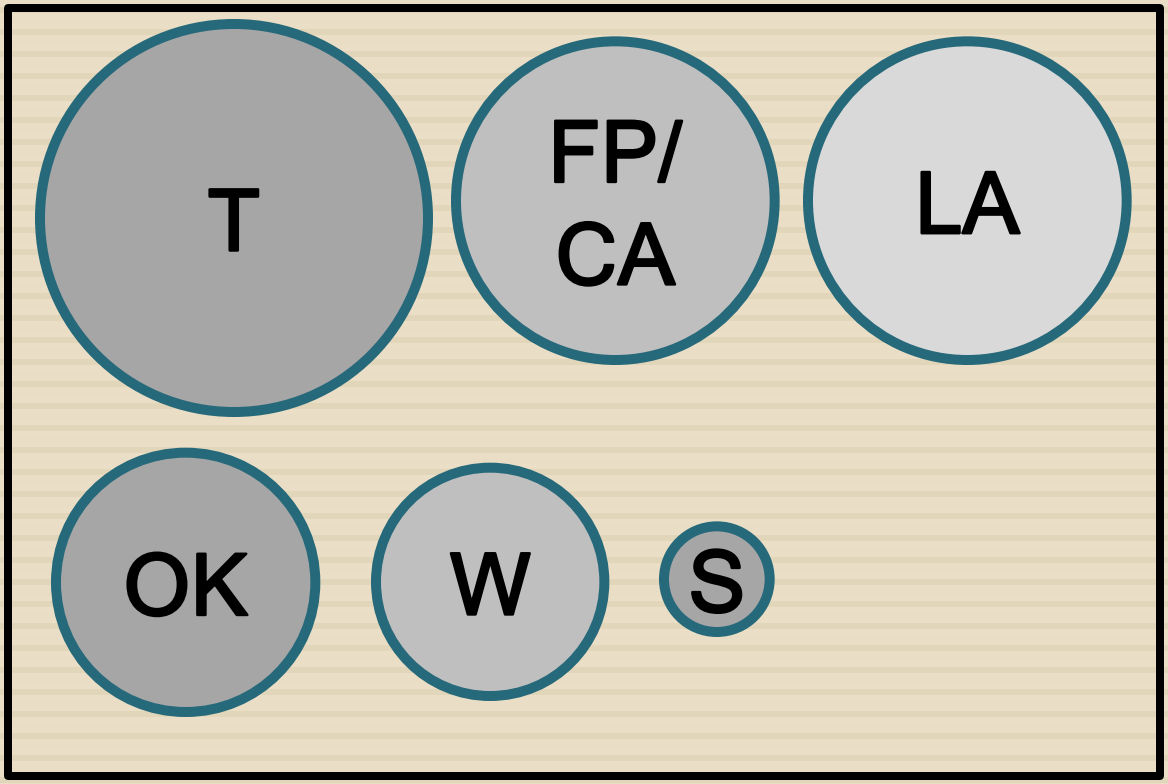
Client Profile

Adjacency Analysis

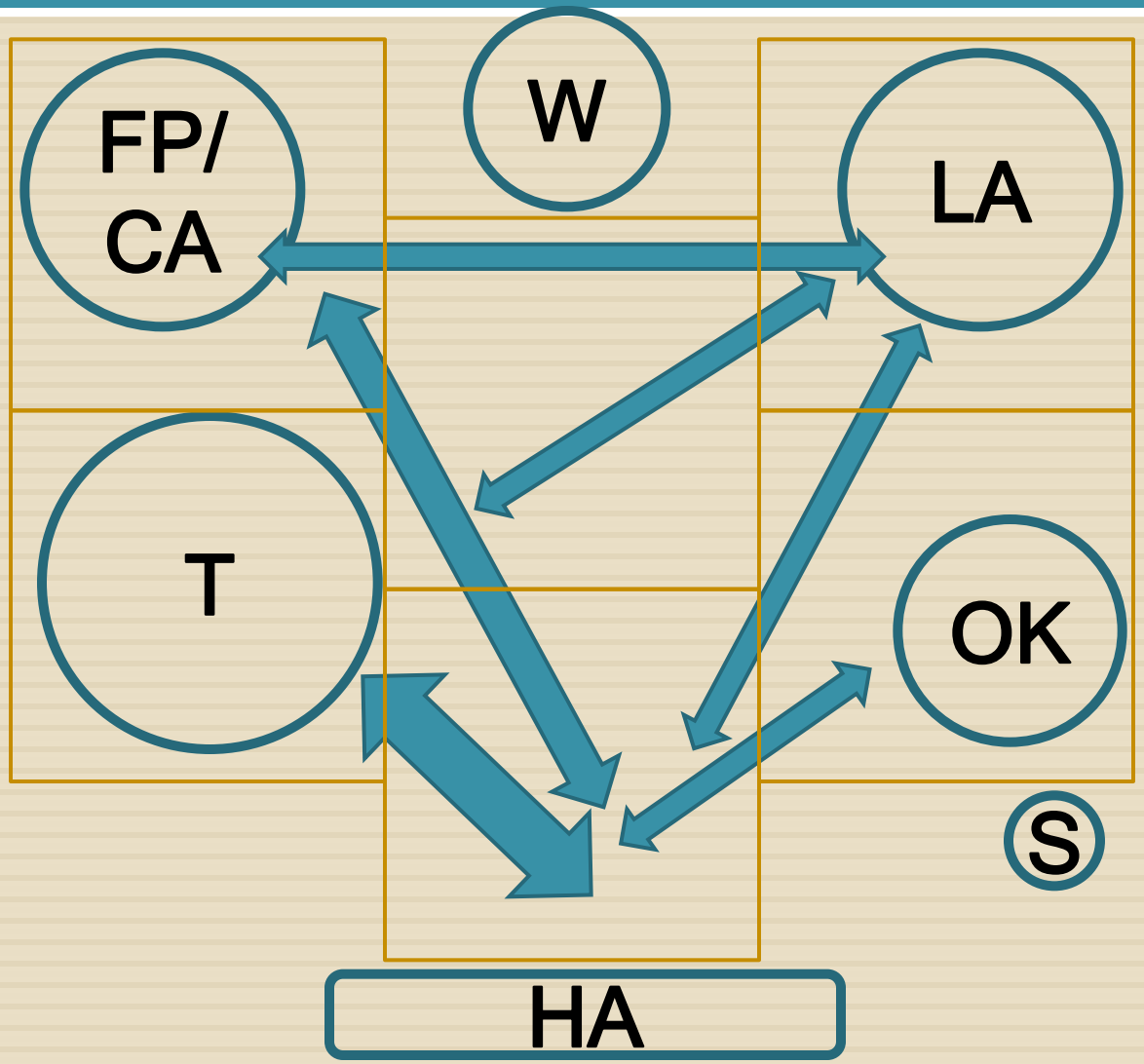


Usage Analysis

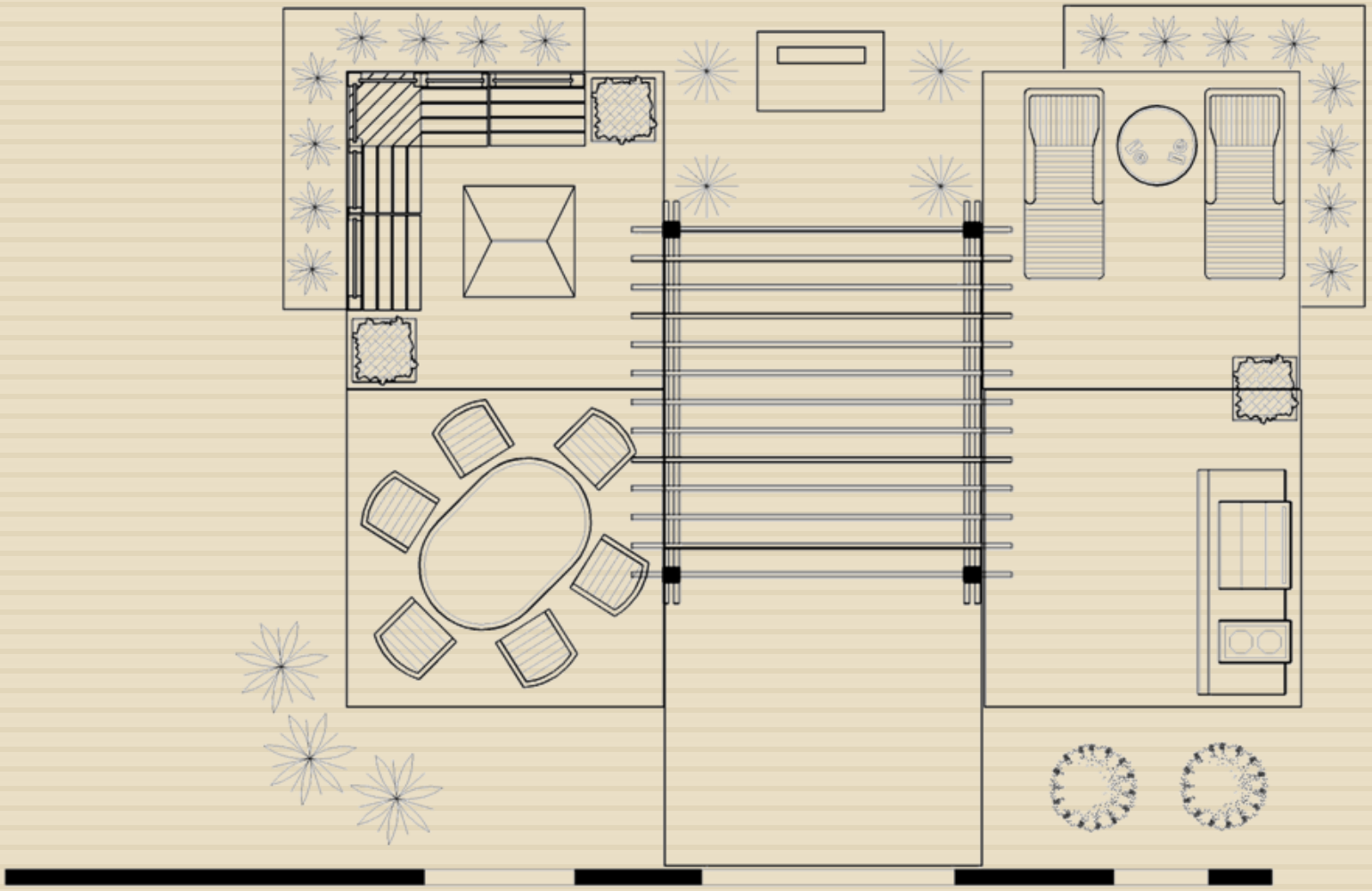
Space Proportions for Bubble Diagrams
Darker Shading Represents Higher Usage



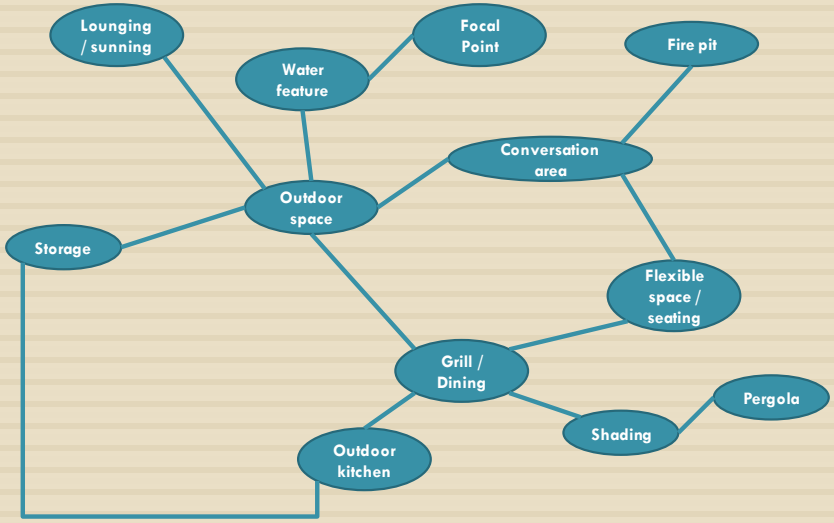
Traffic Flow Analysis

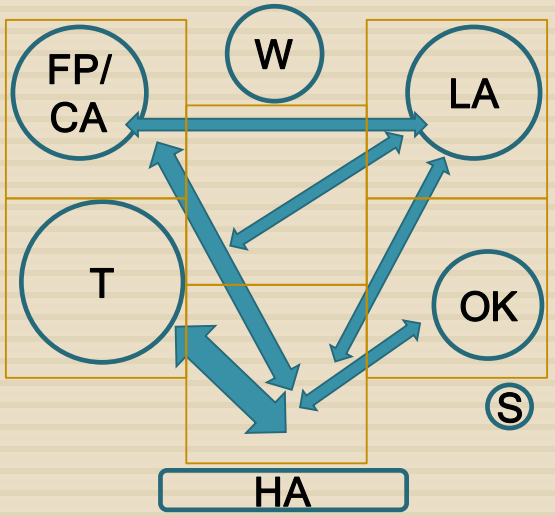


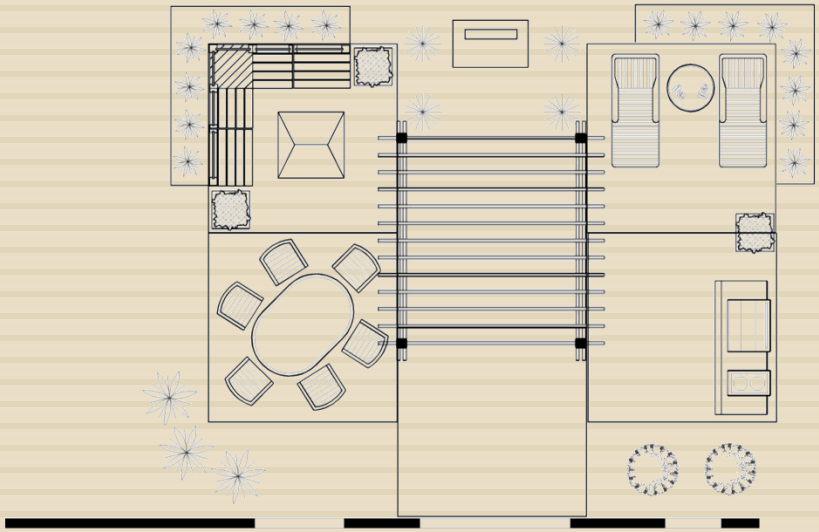
Preliminary Design

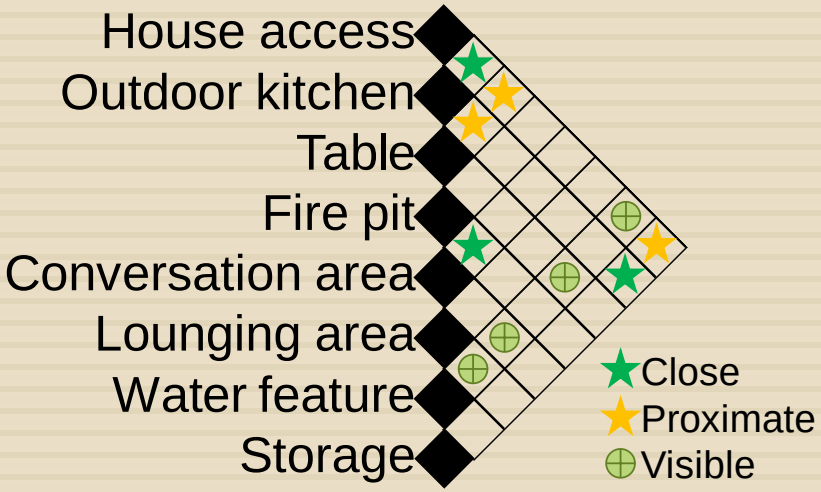


Analysis Supports Design Decisions









Conclusions

- Understanding client is key
- Design Analysis is necessary
  - Synthesize data as gathered
  - Validate as you go
- Implementation / Post-implementation follow-up

Questions / Discussion