THESIS PRESENTATION OUTLINE

Presentation Outline and Sample Slides

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# Table of Contents

Table of Contents...........................................2
Thesis Presentation Outline.................................3
Introduction Sample Slide..................................4
Photovoltaic Glass Window System Implementation Sample Slide............................5
Renewable Energy/Electrical Breadth Sample Slide.....................................................6
Green Roof System Implementation Sample Slide.........................................................7
Thesis Presentation Outline

I. Introduction (2 screens)
   a. Self
   b. Project
   c. Outline of presentation/technical analysis and breadth topics

II. Project Background (2 screens)
   a. Location
   b. Building type and function
   c. General building statistics
      i. Contract type and overall cost
      ii. Project schedule
      iii. Systems

III. Technical Analysis #1: Photovoltaic Glass Window System Implementation (10 screens)
   a. Problem identification and research goal
   b. System design
   c. Renewable energy/Electrical breadth (Only Breadth presented in detail = 3 screens)
      i. Introduction
      ii. Energy production
      iii. Electrical system tie-in
      iv. Results
   d. Feasibility analysis
      i. System Cost
      ii. Rebates/Incentives
      iii. Payback Period
   e. Recommendation and conclusion

IV. Technical Analysis #2: Green Roof System Implementation (4 screens)
   a. Problem identification and research goal
   b. System design
   c. Structural Impact
   d. Feasibility analysis
      i. System cost
      ii. Rent comparison
   e. Recommendation and conclusion

V. Technical Analysis #3: 3D Laser Technology Implementation (5 screens)
   a. Problem identification and research goal
   b. Summary of issues caused by as-built drawing inconsistencies
   c. Overview of quality control
   d. Cost comparison
   e. Recommendation and conclusion

VI. Technical Analysis #4: Critical Industry Issue – Energy Management (Sensor System) (10 screens)
   a. Problem identification and research goal
   b. Overview of energy management
   c. Overview of occupant behavior
   d. System design
   e. Energy reduction
   f. Feasibility analysis
      i. System cost
      ii. Rebates and incentives
      iii. Payback period
   g. Recommendation and conclusion

VII. Summary of All Recommendations and Conclusions (1 screen)

VIII. Acknowledgements (1 screen)
PRESENTATION OUTLINE:

I. Project Background
II. Analysis #1: Photovoltaic Glass Window System
   I. System Design
   II. Renewable Energy/Electrical Impact
   III. Feasibility Analysis
III. Analysis #2: Green Roof System
   I. System Design
   II. Structural Impact
   III. Feasibility Analysis
IV. Analysis #3: BIM Laser Scanning Technology
   I. As-uilt Drawing Issues
   II. Quality Control
   III. Cost Comparison
V. Appendix #4: Energy Management (Linear System)
   I. System Design
   II. Simulation
   III. Feasibility Analysis
VI. Recommendations and Final Conclusions
VII. Acknowledgements

PROBLEM IDENTIFICATION:

• Project achieving LEED certification through sustainable construction methods
• Few sustainable design techniques pursued in project
• High building electrical energy consumption

RESEARCH GOAL:

• Perform preliminary design of photovoltaic glass window system
• Determine financial feasibility of system
• Reduce electrical energy consumption
PRESENTATION OUTLINE:

I. Project Background
II. Analysis #1: Photovoltaic Glass Window System
   I. System Design
   II. Renewable Energy/Electrical Impact
   III. Feasibility Analysis
III. Analysis #2: Green Roof System
   I. System Design
   II. Structural Impact
   III. Feasibility Analysis
IV. Analysis #3: 3D Laser Scanning Technology
   I. As-Built Drawing Issues
   II. Quality Control
   III. Cost Comparison
V. Analysis #4: Energy Management (Renewable Systems)
   I. System Design
   II. Standards
   III. Feasibility Analysis
VI. Recommendations and Final Conclusions
VII. Acknowledgements

EXISTING GRID CONNECTION:
- PV glass window system too large for load-side interconnection
- Use supply-side interconnection

ELECTRICAL COMPONENTS REQUIRED:
- DC wire-run
- DC disconnect switch
- Inverter
- AC disconnect switch
- AC wire-run
- Service-tap meter box

Diagram:
- Photovoltaic glass units supply (DC Power)
- Grid power supply
- Power supply to loads
- Inverter
- DC disconnect switch
- AC disconnect switch
- Meter box
- Main distribution panel
- PV supply from inverters (AC Power)
PRESENTATION OUTLINE:
I. Project Background
II. Analysis #1: Photovoltaic Glass Window System
  I. System Design
  II. Energy/Electrical Impact
  III. Feasibility Analysis
III. Analysis #2: Green Roof System
  I. System Design
  II. Structural Impact
  III. Feasibility Analysis
IV. Analysis #3: 3D Laser Scanning Technology
  I. As-Built Drawing Issues
  II. Quality Control
  III. Cost Comparison
V. Analysis #4: Energy Management (Green System)
  I. System Design
  II. Substations
  III. Feasibility Analysis
VI. Recommendations and Final Conclusions
VII. Acknowledgements

PROBLEM IDENTIFICATION:
• Project is achieving LEED certification through sustainable construction methods
• Few sustainable design techniques pursued in project

RESEARCH GOAL:
• Perform preliminary resident-accessible design of green roof system
• Determine structural impact on existing roof system
• Determine financial feasibility of system