

Shippensburg University – Energy Savings Project



Mike Mumper – TAC-Abacus Engineered Systems

Shippensburg University - Overview

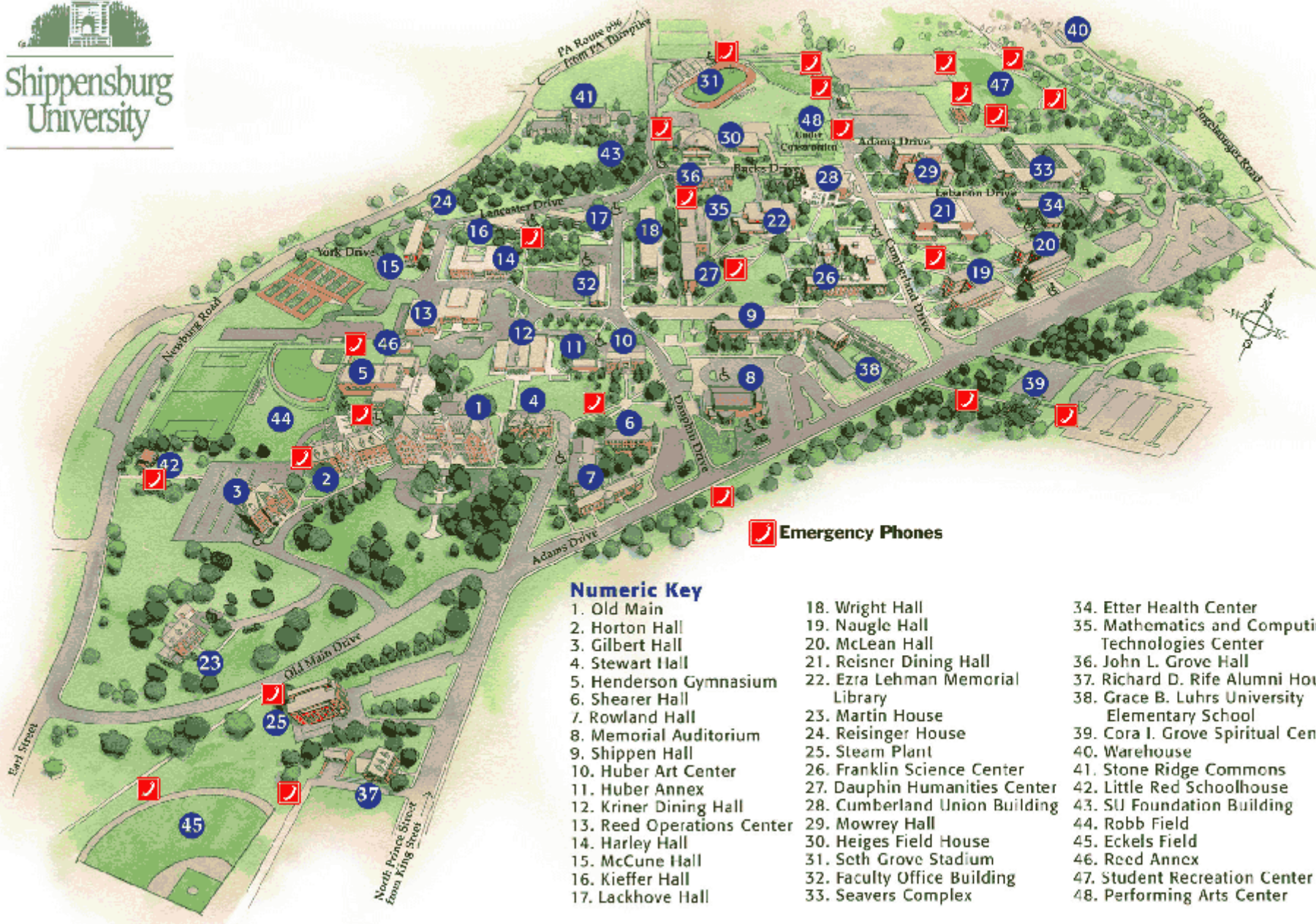
- **Founded in 1871 as the Cumberland Valley Normal State Normal School**
- **A PASSHE University**
- **6,500 enrollment in 52 undergraduate programs**
- **1,803,717 GSF in 42 buildings dating from 1871 to 1990's**

Shippensburg University - Overview



Design Challenges

- Multiple buildings of mixed age and use
- Time frame from proposal to implementation
- Missed savings opportunities where DGS projects were scheduled
- New process (first PASSHE institution through GESA)
- Central plant location and operation
- Teaching a client as design is in process



 Emergency Phones

Numeric Key

- | | | |
|----------------------------|----------------------------------|---|
| 1. Old Main | 18. Wright Hall | 34. Etter Health Center |
| 2. Horton Hall | 19. Naugle Hall | 35. Mathematics and Computing Technologies Center |
| 3. Gilbert Hall | 20. McLean Hall | 36. John L. Grove Hall |
| 4. Stewart Hall | 21. Reisner Dining Hall | 37. Richard D. Rife Alumni House |
| 5. Henderson Gymnasium | 22. Ezra Lehman Memorial Library | 38. Grace B. Luhrs University Elementary School |
| 6. Shearer Hall | 23. Martin House | 39. Cora I. Grove Spiritual Center |
| 7. Rowland Hall | 24. Reisinger House | 40. Warehouse |
| 8. Memorial Auditorium | 25. Steam Plant | 41. Stone Ridge Commons |
| 9. Shippen Hall | 26. Franklin Science Center | 42. Little Red Schoolhouse |
| 10. Huber Art Center | 27. Dauphin Humanities Center | 43. SU Foundation Building |
| 11. Huber Annex | 28. Cumberland Union Building | 44. Robb Field |
| 12. Kriner Dining Hall | 29. Mowrey Hall | 45. Eckels Field |
| 13. Reed Operations Center | 30. Heiges Field House | 46. Reed Annex |
| 14. Harley Hall | 31. Seth Grove Stadium | 47. Student Recreation Center |
| 15. McCune Hall | 32. Faculty Office Building | 48. Performing Arts Center |
| 16. Kieffer Hall | 33. Seavers Complex | |
| 17. Lackhove Hall | | |

Final ECM Package

- **Automatic Temperature Controls**
- **Indoor Lighting**
- **Water Conservation**
- **Motors and Variable Speed Drives**
- **Pool Cover**
- **Pipe Insulation**
- **Power Factor Correction**
- **Steam Trap Replacement**
- **Building Envelope Improvements**

Construction Challenges

- **Schedule and Coordination**
 - Multiple buildings
 - Varied schedules (especially in summer)
- **Scope modifications due to time frame from design to implementation**
- **New process (first PASSHE institution through GESA)**
- **Appointment of a University Energy Manager during the project**

Benefits

- **\$670,922 in annual guaranteed savings**
- **A complex, multi-building project implemented via single point of contact (best value procurement)**
- **Commissioning**
- **Campus wide controls**
- **Performance**

Lessons Learned

- **Understand the process and the players involved**
- **Encourage the owner to ask questions**
- **Work to reduce the time from RFP to Implementation**

Questions