

Future of Modern Architecture on USG Campus'



Mid-20th Century Buildings Workshop

Facility Officers Conference/ Columbus, Ga./ 26 October 2011

What is Modern Architecture?

Is it style?

Is it materials?

Is it spatial characteristics?



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1914



1939

Style?



1951



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Holland Power Plant & Laboratory Building)
1914



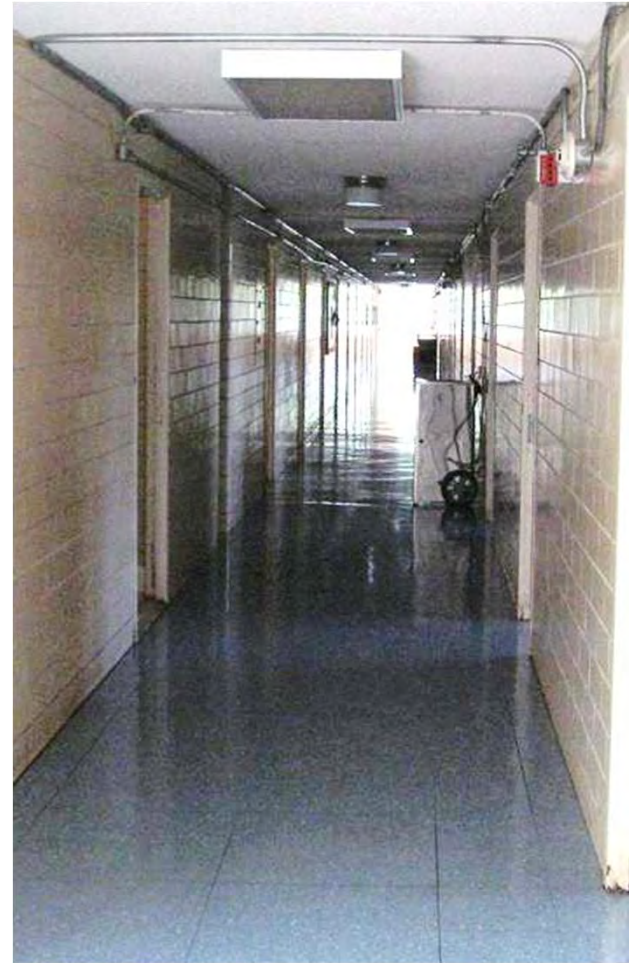
Hinman Research Building
1939/1951

Materials?



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Configuration?



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Modern Architecture is a progression of design and construction that spans from the late 19th Century to today.

Mid-century is a discrete span of time along that progression



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Future of Mid Century Modern Architecture

Sustainability

Project Financing & Life Cycle

Maintenance

Planning & Design



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Sustainability and the Future of Mid Century Modern Architecture

Building Envelope
Building Systems
New Technology



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Sustainability and the Future of Mid Century Modern Architecture

Building Envelope Performance
Building Systems Performance
New Sustainability Technology



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Sustainability and the Future of Mid Century Modern Architecture

Building Envelope Performance
Building Systems Performance
New Sustainability Technology



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Sustainability and the Future of Mid Century Modern Architecture

Building Envelope Performance
Building Systems Performance
New “Sustainability” Technology



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Historically Important
Dormitory Building

Question of Window Replacement or Repair



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach:

- Energy Modeled Entire Building not just windows
- Compared the Results of the modeling with energy performance of other dormitories on campus



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach: Modeled Entire Building not just windows

Conclusions Regarding Windows

- Energy performance as good as or better than manufactured “replacement” window units being considered.



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach: Modeled Entire Building not just windows

Conclusions Regarding Windows

- Frames performed as well as or better than manufactured “replacement” window frames
- Historic frame retrofitted with insulated glass unit and weather-stripping achieved parity with “replacement” windows.



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach: Modeled Entire Building not just windows

Conclusions Regarding Windows

- Frames performed as well as or better than manufactured “replacement” window frames
- Frame retrofitted with insulated glass unit and weather-stripping achieved parity with “replacement” windows.
- Historic Frame Construction is repairable and therefore **sustainable**, Manufactured Window Unit are typically not Repairable and if so repair work is proprietary.



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach: Modeled Entire Building not just windows

Other Finding

The historic building with original windows and un-insulated roof **approached or in some cases equaled or exceeded** the energy performance of “green” buildings built on campus on a per bed basis.



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Sustainability and the Future of Mid Century Modern Architecture

Recent Experience with Mid 20th Century Dormitory Building
Question of Window Replacement or Repair

Approach: Modeled Entire Building not just windows

Other Findings

The historic building with original windows and un-insulated roof performed equal to or in some cases better than recent “green” buildings built on campus on a per bed basis.

The reason was **DENSITY**



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Funding & Building Life Cycle
and the Future of Mid Century Modern Architecture



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Building Maintenance and the Future of Mid Century Modern Architecture



Systematic & Preventive Building Maintenance = Building Longevity

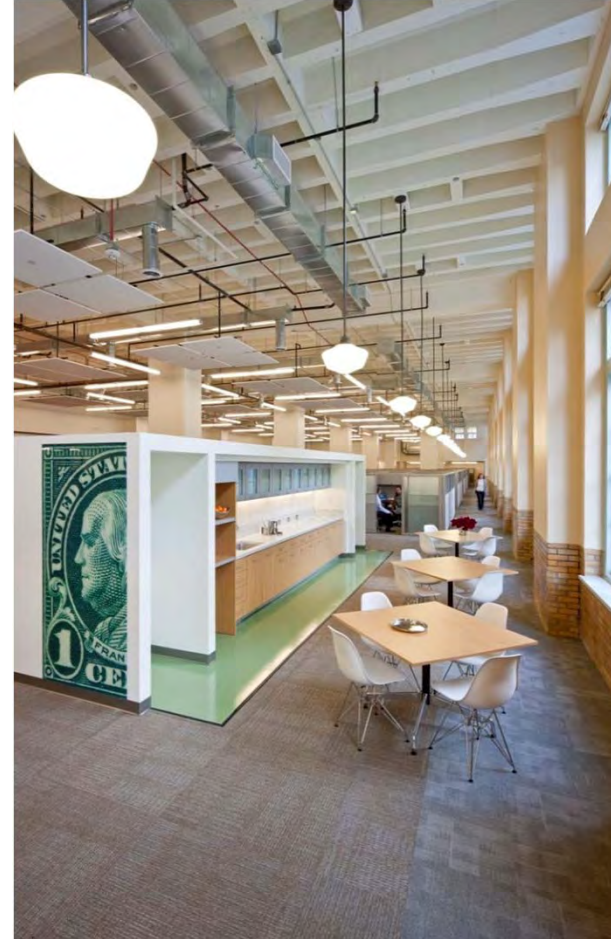
Building Longevity = Sustainability



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Planning & Design and the Future of Mid Century Modern Architecture



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