

# HISTORIC STRUCTURE REPORT

## RICH COMPUTER CENTER



**GEORGIA INSTITUTE OF TECHNOLOGY**

Atlanta, GA

October 12, 2021

**LORD AECK SARGENT**

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## Administrative Data

### Dates of Construction

Calculator Building: 1947

Rich Electronic Computer Center: 1955

Rich Computer Center: 1971

Rich Chiller Plant: 1985

### Architects

Calculator Building: Bush-Brown, Gailey, Heffernan, architects, R.L. Aeck, associate

Rich Electronic Computer Center: A. Thomas Bradbury, architect, Ralph E. Slay, associate

Rich Computer Center: Cooper Carry and Associates

### Contractors

Calculator Building: Thompson & Street (Charlotte, NC)

Rich Electronic Computer Center: Concrete Builders

Rich Computer Center: Unknown

Present Owner: Georgia Institute of Technology

Historic Use: Academic

Present Use: Academic

## Location Data

Address: 258 4th Street NW, Atlanta, GA 30332

Coordinates: 33°46'30.3"N 84°23'42.2"W

## Project Team

Charles Lawrence, MSHP, Project Manager/Lead Investigator/Author, Lord Aeck Sargent

Karen Gravel, AIA, Principal in Charge, Lord Aeck Sargent

Kaleigh Sawyer, AIA, Architect, Lord Aeck Sargent

## Executive Summary

The Rich Computer Center is a combination of four buildings; The 1946 Calculator Building (051B), the 1955 Rich Electronic Computer Center (colloquially known as “Old Rich”, 051C), the 1971 Rich Computer Center expansion (“New Rich”, 051D), and the 1985 Rich Chiller Plant (051F)<sup>1</sup>. This Historic Structure Report functions as a guide for the Georgia Institute of Technology to make decisions about the treatment and use of the buildings and their character-defining features, where those features are identified as worthy of preservation.

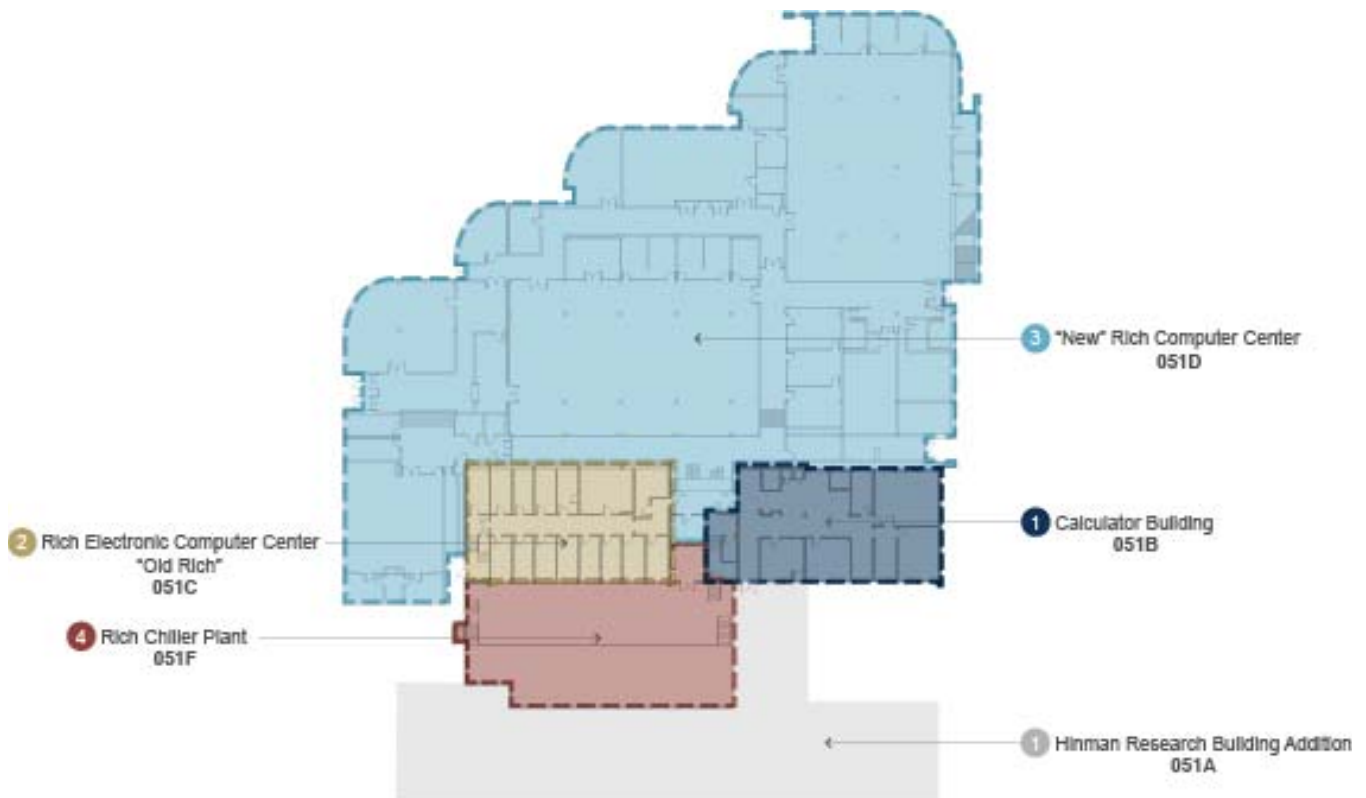


Figure 1: The Rich Computer Center is composed of several buildings; The Calculator Building (1947), Rich Electronic Computer Center (1955), Rich Computer Center (1971), and the Rich Chiller Plant (1985). The complex is connected to the Hinman Research Building (1939-41).

Based on an evaluation of the history and development of the buildings and an assessment of their existing features, this report identifies the Calculator Building and Old Rich as having features that are worthy of preservation. The newer Rich expansion and the Rich Chiller Plant do not have features that have been identified for preservation.

The Calculator Building and Old Rich were the earliest dedicated computer buildings on campus and some of the earliest in the South. Their design represents a cohesive aesthetic developed by campus architects Bush-Brown, Gailey, and Heffernan, with Rich representing a tectonic shift in architecture on campus with the selection of architect A Thomas Bradbury. The two buildings retain enough character-defining features to communicate their significance, but much of their exteriors are currently hidden. Where future opportunities are present, the recommendation is to restore and rehabilitate these features.

<sup>1</sup> The numbering system used in this report corresponds to Georgia Tech’s Capital Planning and Space Management building information management system.

The 1971 Rich expansion, designed by Cooper Carry Architects, diverges from the earlier Modernist theme and represents a type of Brutalist architecture that emphasizes large expanses of featureless, but often curving, brick unit masonry walls. The newer Rich building also features dark-tinted, full-height windows in deep recesses on the ground floor and a steel and glass penthouse surrounded by a large roof terrace. While the building represents a continuation of the centralized computing concept pioneered by the Calculator Building and Old Rich, it is neither centrally important to the story of computing on the campus, nor does it retain architectural characteristics considered significant for preservation.

As the need for centralized computing diminishes, Georgia Tech may want to consider removal or significant adaptation of the New Rich Building building, especially to the benefit of rehabilitating the Calculator Building and Old Rich. As well, the large Rich Chiller Plant, inserted between buildings in 1985, may eventually become obsolete and its removal or adaptation would provide an opportunity to re-expose the exteriors of Old Rich.



# PART I.I

HISTORIC BACKGROUND  
DEVELOPMENTAL HISTORY  
PHYSICAL DESCRIPTION  
STATEMENT OF SIGNIFICANCE  
PRESERVATION ZONES

## Historic Background

In 1919, the Engineering Experiment Station (EES, predecessor to the Georgia Tech Research Institute) was established at the Georgia Institute of Technology (Georgia Tech). The novel concept created a laboratory for industrial research and was analogous to the familiar agricultural research extensions associated with agricultural colleges around the country. State legislation directed the EES to perform research in “transportation, road building, drainage, irrigation, flood protection, aeronautics, aerodynamics, fuels, power, lighting, heating, refrigeration, ventilation, sanitation and architecture.” Initially, the EES was under-funded and housed in various surplus spaces around campus.<sup>1</sup>

In 1929, a “Research Club” was formed and, among other topics, studied the engineering experiment stations established at other universities around the nation. The group, led by W. Harry Vaughan, professor of ceramic engineering, issued a report later that year which later prompted the Georgia Board of Regents to finally fund the EES. The Georgia Tech Engineering Experiment Station was officially opened in April, 1934 with Vaughan as part-time director and a state budget of \$5,000.<sup>2</sup> Almost immediately, the EES was awarded lucrative research contracts and the benefits of the program, for the university and for Georgia’s economy, became apparent.

By 1939, the research activities of the EES were housed in the new Research Building, completed that year and designed by campus architects, Bush-Brown, Gailey, & Heffernan. The building was designed for later additions [Figure 2].

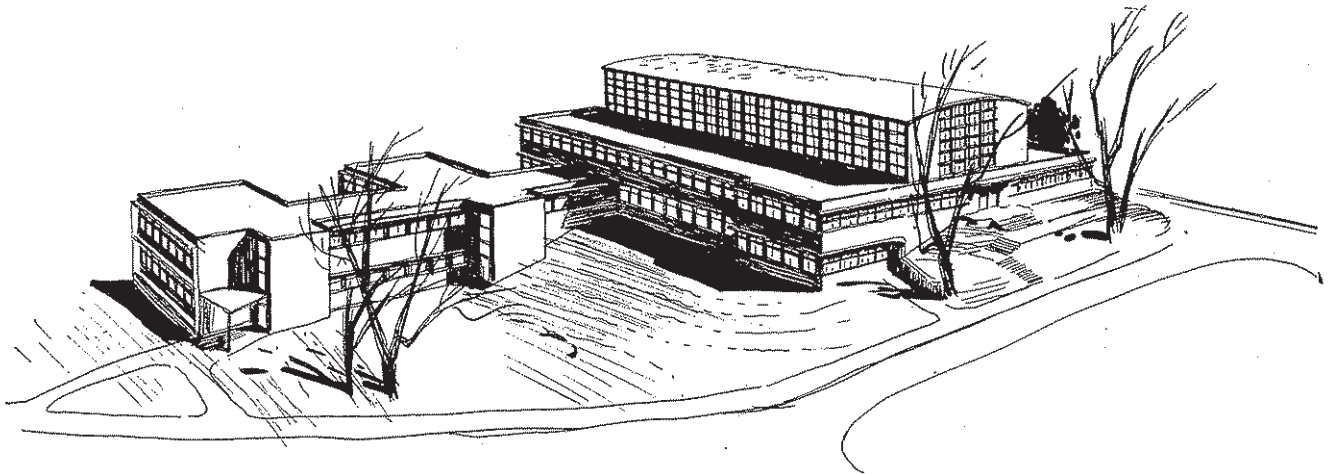


Figure 2: Architects Bush-Brown, Gailey, Heffernan sketch of the Research Building with additions, circa 1939. From “University Lab”, Bush-Brown, Gailey, & Heffernan, Georgia Institute of Technology archives, n.d.

Research activity at Tech increased significantly in the early 1940s, much of it related to military technology, and the need for advanced computation became evident. Around the same time, Georgia’s commercial and industrial institutions were starting to explore computerization for their own purposes. In 1945 a \$100,000 financial gift

<sup>1</sup> Goettling, Gary. “Eight Decades of Revolutions Research”, *Georgia Tech Alumni Magazine*, Spring 1998.

<sup>2</sup> McMath, Robert C.; Ronald H. Bayor; James E. Brittain; Lawrence Foster; August W. Giebelhaus; Germaine M. Reed (1985). *Engineering the New South: Georgia Tech 1885–1985*. Athens, GA: University of Georgia Press.



from the Georgia Power Corporation was used for the purchase of a Westinghouse A-C Network Calculator.<sup>3</sup> The analog “calculator” would be used to process complex computations, including modeling electrical power grid systems and aerodynamic forces on early helicopter prototypes, and used by several of the school’s engineering departments. The “calculator” was one of only 19 in the country and the first of its kind in the South.<sup>4</sup>

To house the massive new machine, with several components large enough to fill a 32-foot by 16-foot room [Figure 3], a new air-conditioned building was required. Ground was broken for the Calculator Building, designed by Bush-Brown, Gailey, & Heffernan in August of 1946. The new building was built at a cost of \$168,000.<sup>5</sup> The Calculator Building, and the calculator it housed, went into service in November of 1947. The Westinghouse machine was in operation through the late 1960s.

In 1951, an addition to the Research Building was completed. It was also designed by Bush-Brown, Gailey, Heffernan, and with R. L. Aeck, associate. Called the Hinman Connector, it connected the Hinman building to the Calculator Building [Figure 5].

Interest in computing grew slowly at Tech in the early years, but by 1953 a Computer Center was established with a mission of “education, service to industry, and research.” The Computer Center had the financial support from the Rich Foundation and following the publication of *The Plan to Establish the Rich Electronic Computer Center: A Laboratory for Modern Computation at Georgia Institute of Technology*, matching funds from the state were allocated to build an additional computer building, dedicated in December of 1955 as the Rich Electronic Computer Center [Figure 6]. For the design of the building, Tech selected an outside architect, A. Thomas Bradbury,

3 “Magic Brain Building Ground Broken at Tech”, *Atlanta Constitution*, Aug. 4, 1946, p.12A

4 “Electro-Mechanical Brain Dedicated at Georgia Tech”, *Atlanta Constitution*, Nov 22, 1947, p.1

5 *ibid*



Figure 3: Westinghouse A. C. Power Network Calculator in Phillips Hall, ca. 1955 Cornell University College of Engineering photographs, #16-2-2378. Division of Rare and Manuscript Collections, Cornell University Library.

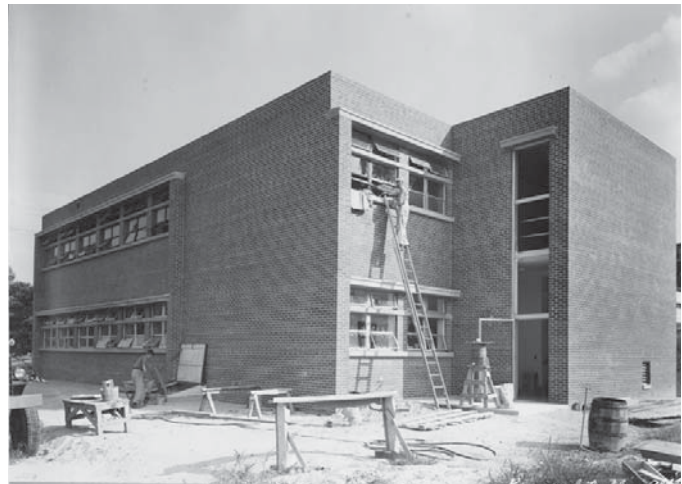


Figure 4: Calculator Building (“Research Building Addition”) looking Southwest, Oct. 1 1947. Courtesy of Georgia Tech archives.



Figure 5: Aerial view of the Hinman “High-bay” building (top left), the 1951 connector (center), and the Calculator Building (lower right), circa 1951.

## PM HEFFERNAN

P. M. (Paul Malcolm) Heffernan (1909-1987) served on the faculty in the School of Architecture at Georgia Tech beginning in 1938. Succeeding Harold Bush-Brown as Director of the School in 1956, Heffernan served in that position until his retirement in 1976.

Heffernan, a Harvard graduate and recipient of the Paris Prize, began teaching in the Department of Architecture (later the School of Architecture) at Georgia Tech in 1938. After Harold Bush-Brown's retirement in 1956, Heffernan became the Director of the School of Architecture, a position he held until his own retirement in 1976. In addition to his teaching and research, he became a partner in the firm of Bush-Brown, Gailey, and Heffernan, a firm made up of Tech Architecture faculty that was responsible for the design of many campus buildings, including the Research Building (1939), Hightower Textile Engineering Building (1949), the Price-Gilbert Library (1953), and the first Architecture building (1952).<sup>1</sup>

## A THOMAS BRADBURY

A. Thomas Bradbury (1902-1992) was a Georgia Tech architecture graduate (1923) and a lawyer, admitted to the bar in 1933. After working for Robert and Company and Hentz, Adler, and Shutze, Bradbury formed a number of partnerships before founding his own firm. Bradbury created a successful practice designing buildings for large institutional clients and is responsible for the design of several State of Georgia government buildings, including; the State Law and Justice Building (1954), the State Agriculture Building (1954), the Department of Labor Building (1955), the State Health Building (1958), the Transportation Building (1957), the Georgia Mental Health Institute (1962-63), and the Georgia Archives Building (1965).

## CONFLICT

Around the time that Bradbury was engaged in the design and construction of Georgia's governmental buildings (mid-1950s) he was also petitioning state college officials to open up the process of selecting architects for the design of buildings on the Georgia Tech campus. Up to that point, nearly all of the campus buildings were designed by Bush-Brown, Gailey, and Heffernan or their predecessors. Bradbury's protests were effective and beginning with the Rich Electronic Computer Center (1955), Georgia Tech began selecting outside firms for campus building design. In response, Bush-Brown, Gailey, and Heffernan, immediately shut down. Heffernan ceased all architectural design work and for the rest of his career focused on teaching and administration within the School of Architecture.<sup>2</sup>

<sup>1</sup> Summarized from Heffernan's biography associated with his papers stored at the Georgia Tech Library, Archives and Special Collections.

<sup>2</sup> Craig, Robert M. "A. Thomas Bradbury (1902-1992)." *New Georgia Encyclopedia*. 29 June 2018. Web. 01 July 2021.





Figure 6: Rich Electronic Computer Center, circa 1955. Courtesy of Georgia Tech archives. Note the round concrete columns at the covered entry and second floor corridor.



Figure 7: Remington Rand ERA (UNIVAC)-1101 installed in the Rich Electronic Computer Center, circa 1955. Courtesy of Georgia Tech archives.



Figure 8: An early digital computer; NCR 102D. Public commons.

which led to the end of the architectural practice of Tech faculty member, P.M. Heffernan (see inset on previous page).

The *Rich Computer Center* plan recognized that “the design and use of high-speed electronic digital computers is revolutionizing the place of mathematicians in the scientific, business and commercial life of the country”.<sup>6</sup> One of the first computers to be installed in the Rich Computer Center was a Remington Rand ERA (UNIVAC)-1101 that measured 38 feet by 20 feet and featured a rotating-drum memory equal to 48 kilobytes [Figure 7].<sup>7</sup> Later, and much smaller, systems included an NCR-102-D [Figure 8], an IBM 650, a Burroughs 220, and a Burroughs B5000.<sup>8</sup>

Between 1963 and 1965, the National Science Foundation (NSF) awarded \$1.5 million to Georgia Tech to establish an Information Science Research Center as part of a new national program to develop university “research centers of excellence.”<sup>9</sup> The Information Science program, and later Information and Computer Science, was the precursor to the College of Computing. Continued NSF funding and the success of Georgia Tech’s research initiatives led to the construction of a new Rich Computer Center in 1971, designed by Cooper Carry and Associates beginning in 1967 [Figure 9].

The new Rich building included two large computer rooms, originally designated for a Burroughs 5500 and a UNIVAC 1108. After the facility was completed, the computer rooms in Old Rich and the Calculator Building were partitioned to create additional office space.

In 1984/85, two additional buildings were constructed. The first was a one-story Butler Building

6 A Plan to Establish the Rich Electronic Computer Center: A Laboratory for Modern Computation at Georgia Institute of Technology. Rich Building Folder. Library and Information Center. Georgia Institute of Technology.

7 “GTRI Past: Research Institute Celebrates 75 Years of Applying Technology for Government and Industry” Georgia Tech Research Horizons, April 8, 2010 - <https://rh.gatech.edu/news/341991/gtri-past-research-institute-celebrates-75-years-applying-technology-government-and>

8 Freeman, Peter A. “Origins of the College of Computing” July 27, 2015, p. 2

9 Freeman, Peter A. “College of Computing Timeline of Significant Events (1945 – 2014)”, July 27, 2015, p. 5



Figure 9: Model of the new Rich Computer Center, c. 1969. Georgia Tech archives.

(a pre-fabricated building), built in the courtyard formed by the Hinman Connector and Calculator Building. That building, which provided additional office space, was demolished in 2010. The second building was the Rich Chiller Plant built between the Hinman Connector and the Rich building. The Rich Chiller Plant incorporated existing exterior walls of the Rich and Hinman buildings and resulted in boarding up Old Rich's remaining open windows and concealing the remainder of nearly all of the building's facade.

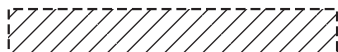
# Developmental History

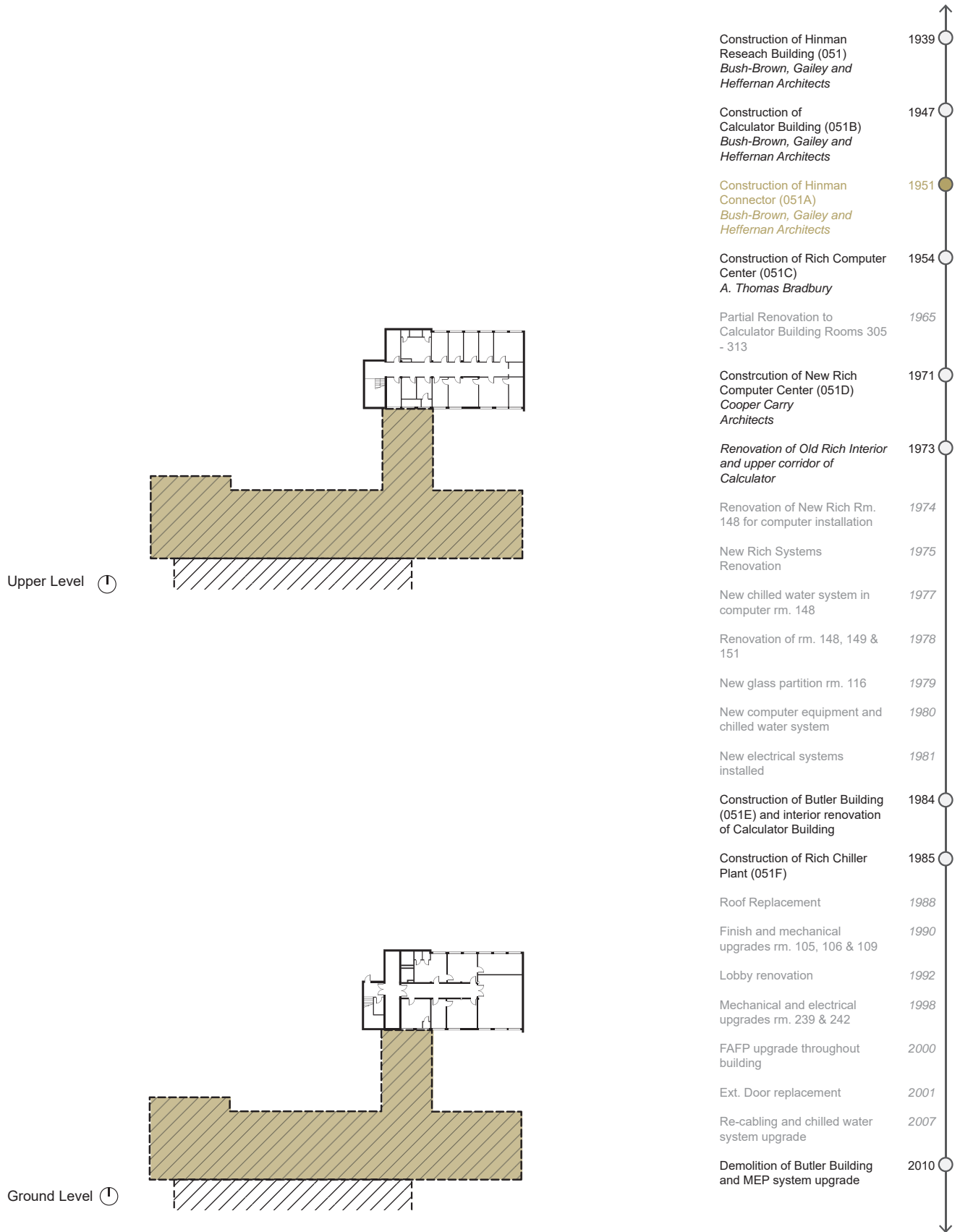


Upper Level

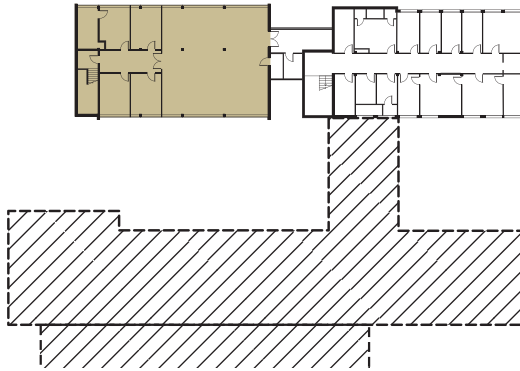


Ground Level

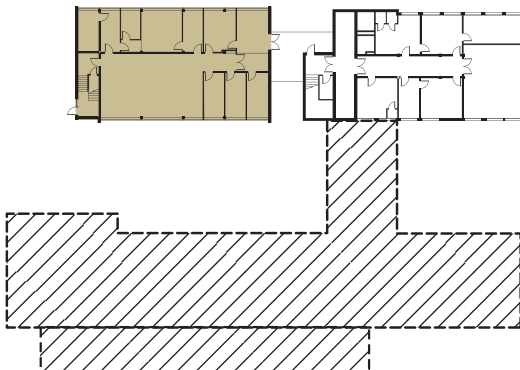




Upper Level 

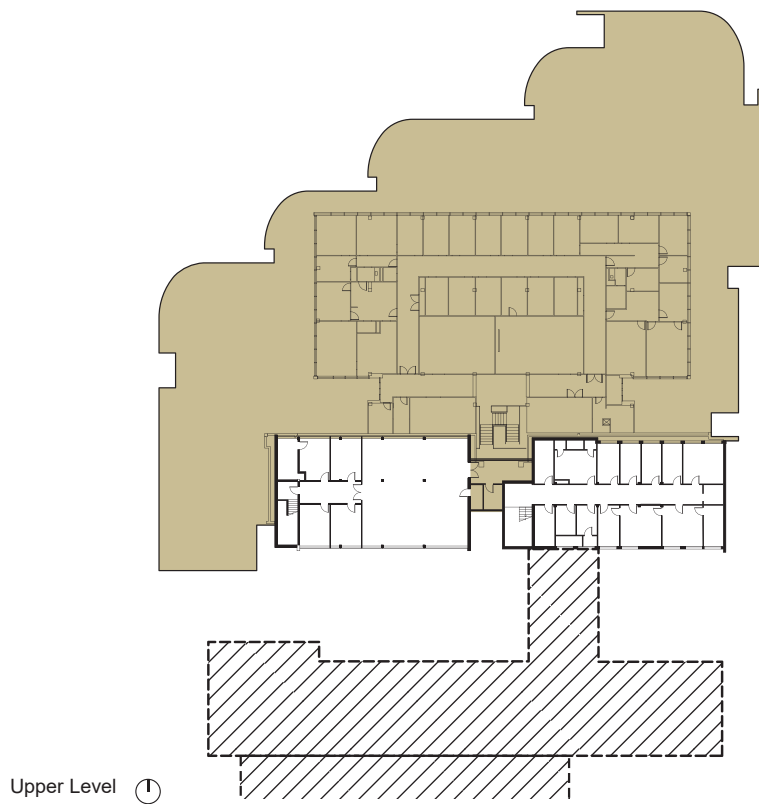


Ground Level 

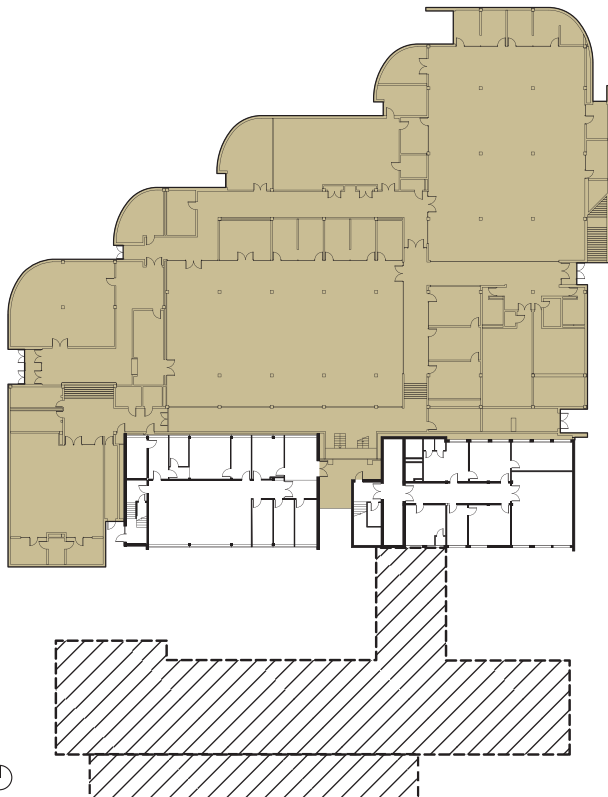


Construction of Hinman Research Building (051) <i>Bush-Brown, Gailey and Heffernan Architects</i>	1939
Construction of Calculator Building (051B) <i>Bush-Brown, Gailey and Heffernan Architects</i>	1947
Construction of Hinman Connector (051A) <i>Bush-Brown, Gailey and Heffernan Architects</i>	1951
Construction of Rich Computer Center (051C) <i>A. Thomas Bradbury</i>	1954
Partial Renovation to Calculator Building Rooms 305 - 313	1965
Construction of New Rich Computer Center (051D) <i>Cooper Carry Architects</i>	1971
Renovation of Old Rich Interior and upper corridor of Calculator	1973
Renovation of New Rich Rm. 148 for computer installation	1974
New Rich Systems Renovation	1975
New chilled water system in computer rm. 148	1977
Renovation of rm. 148, 149 & 151	1978
New glass partition rm. 116	1979
New computer equipment and chilled water system	1980
New electrical systems installed	1981
Construction of Butler Building (051E) and interior renovation of Calculator Building	1984
Construction of Rich Chiller Plant (051F)	1985
Roof Replacement	1988
Finish and mechanical upgrades rm. 105, 106 & 109	1990
Lobby renovation	1992
Mechanical and electrical upgrades rm. 239 & 242	1998
FAFP upgrade throughout building	2000
Ext. Door replacement	2001
Re-cabling and chilled water system upgrade	2007
Demolition of Butler Building and MEP system upgrade	2010





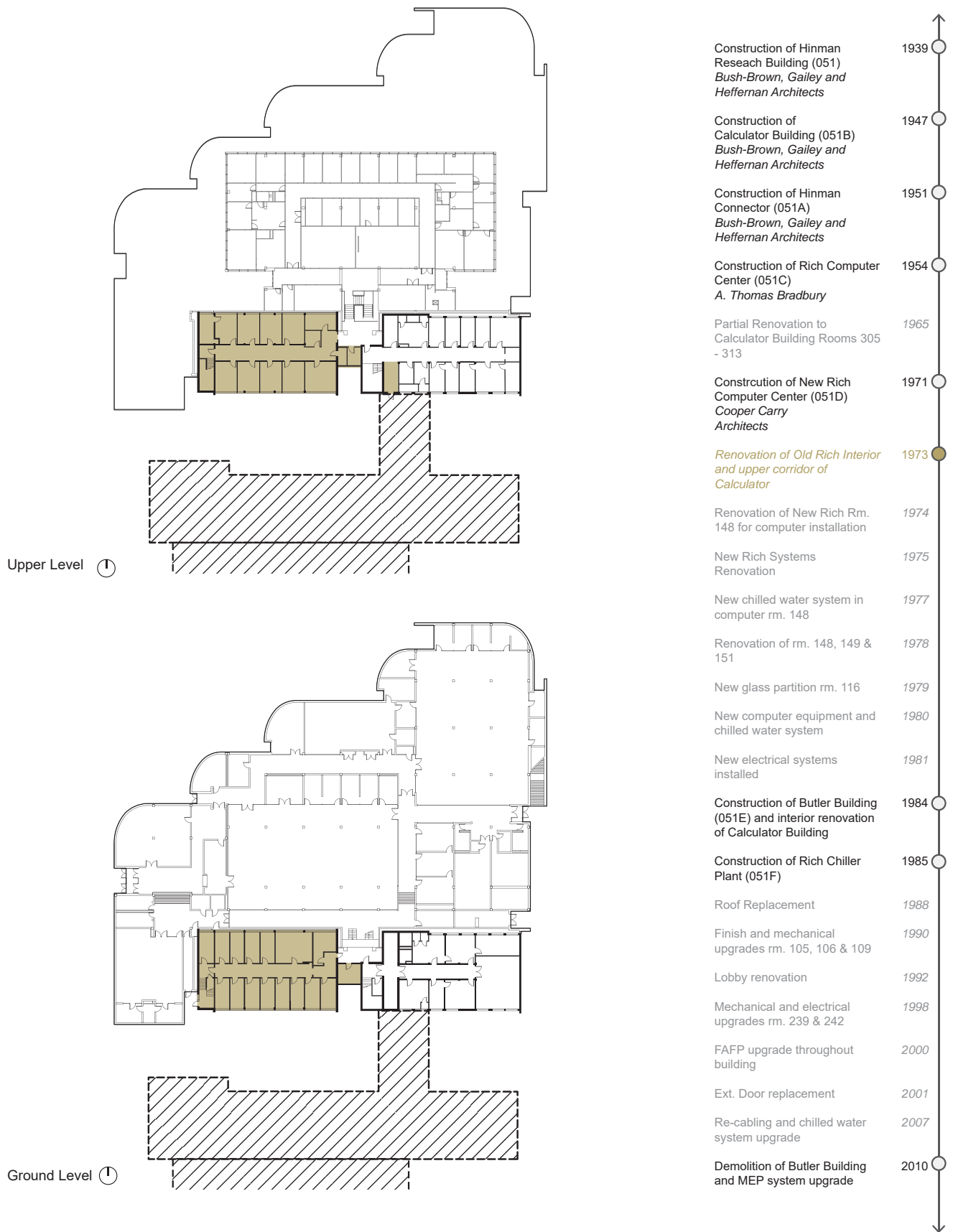
Upper Level ⌚

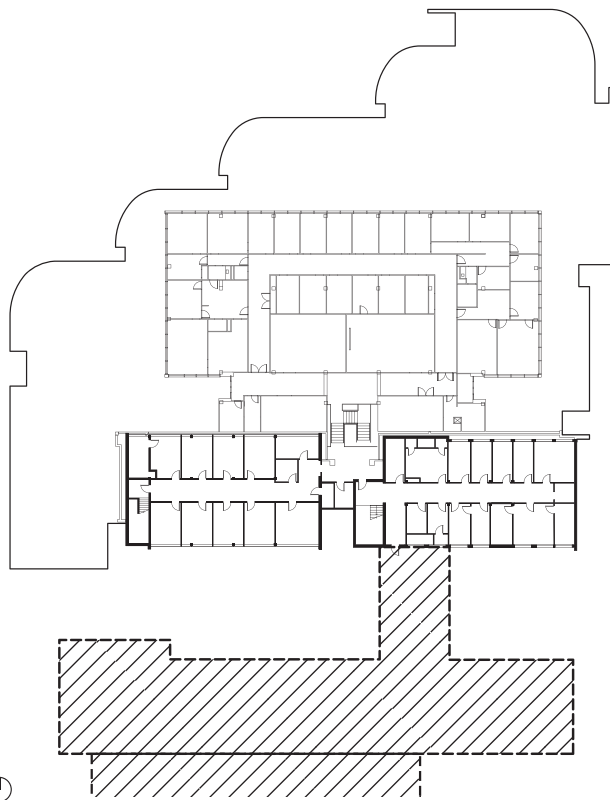


Ground Level ⌚

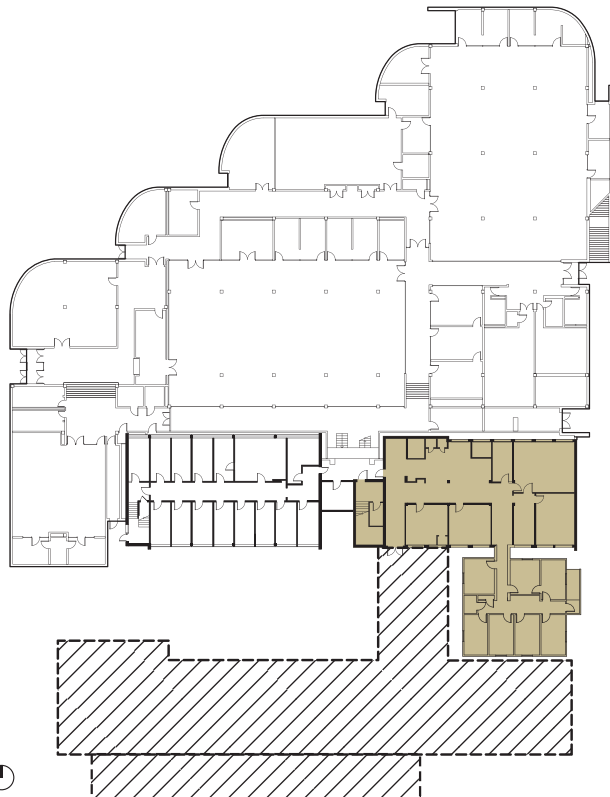
Construction of Hinman Research Building (051) <i>Bush-Brown, Gailey and Heffernan Architects</i>	1939	○
Construction of Calculator Building (051B) <i>Bush-Brown, Gailey and Heffernan Architects</i>	1947	○
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FAFP upgrade throughout building	2000	○
Ext. Door replacement	2001	○
Re-cabling and chilled water system upgrade	2007	○
Demolition of Butler Building and MEP system upgrade	2010	○







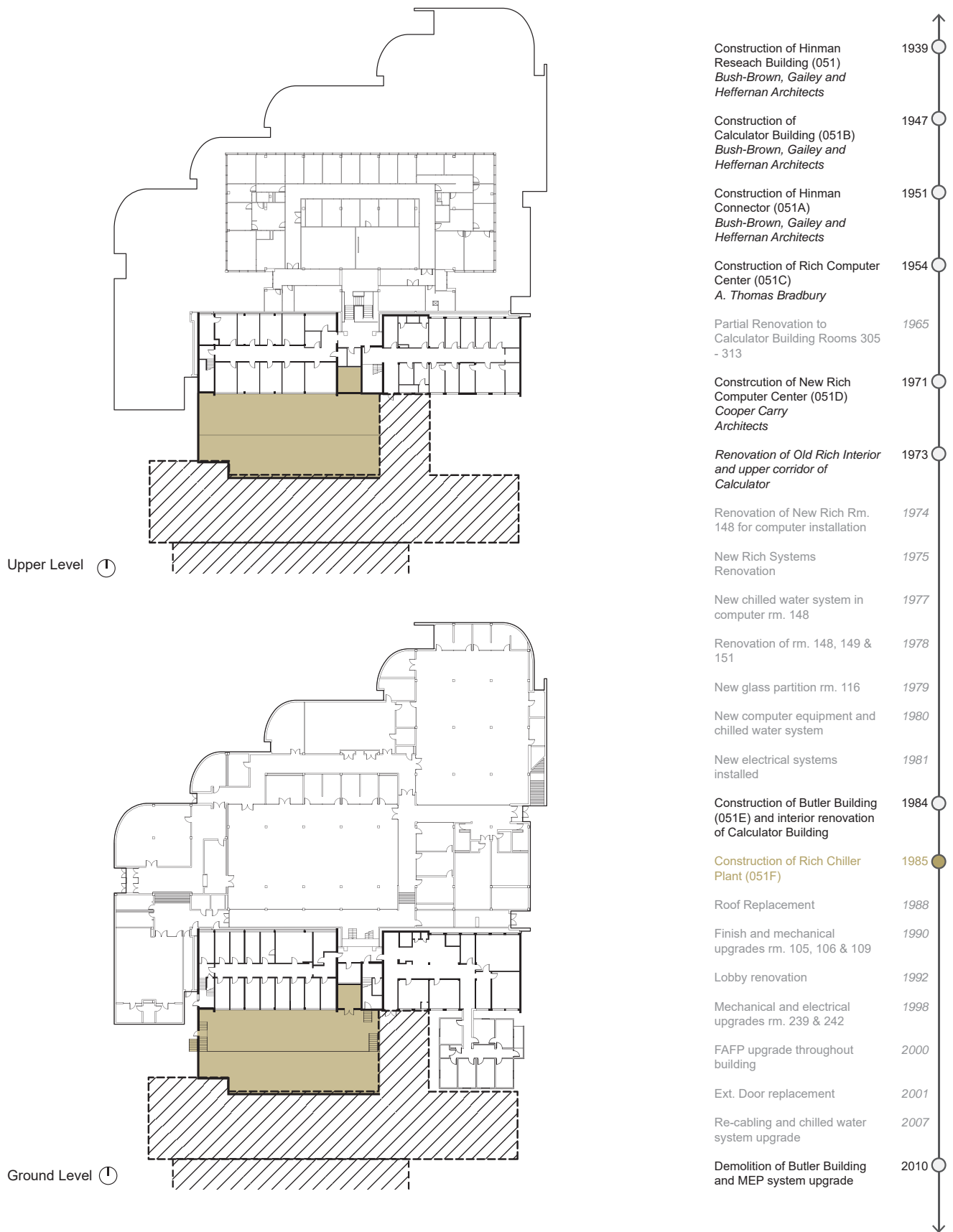
Upper Level ⌚

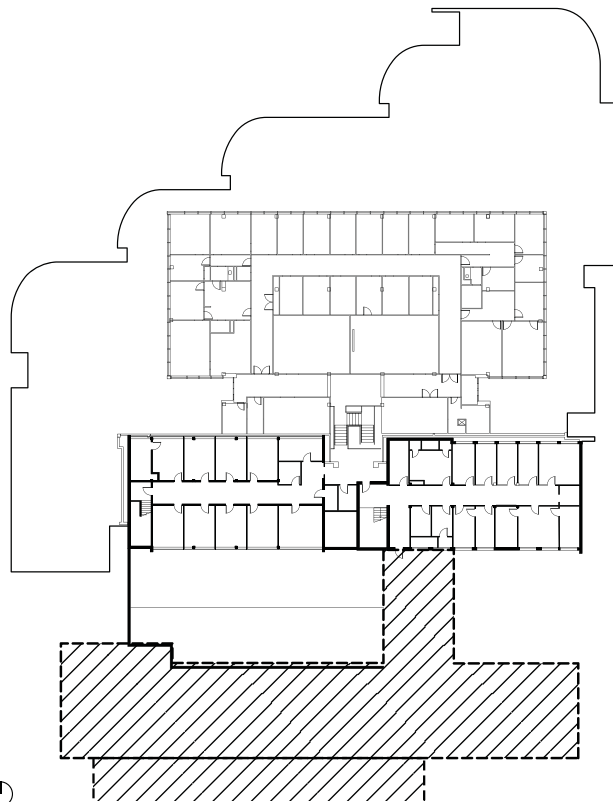


Ground Level ⌚

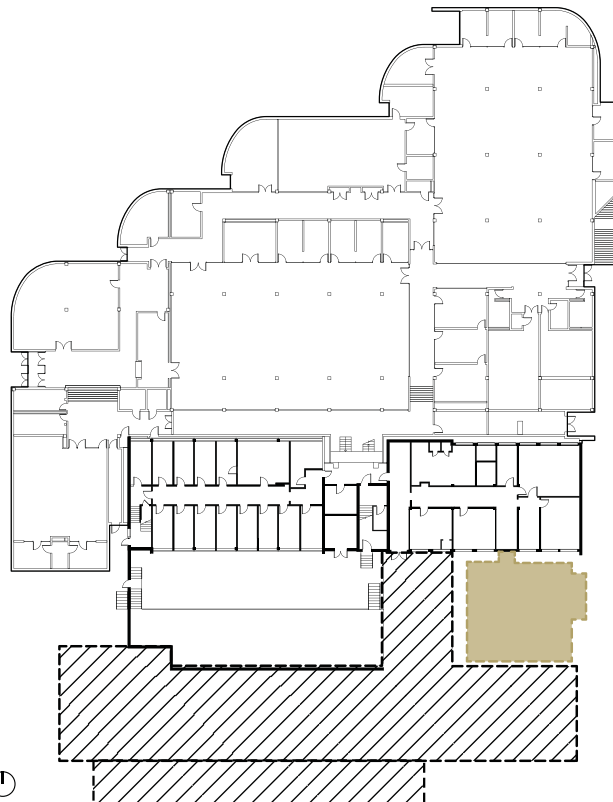
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Upper Level ⌚



Ground Level ⌚

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## Architectural Description

The Rich Electronic Computer Center, the Calculator Building, and the Research Building were designed to be harmonious with each other based on initial concepts for the complex of buildings developed by Bush-Brown, Gailey, and Heffernan in the late-1930s. Common materials among the buildings include red brick veneer walls, horizontal bands of windows, and raw concrete banding and canopies.

The Rich Electronic Computer Center and the Calculator Building are now nearly invisible from the exterior, having been surrounded by the expansion of the Rich Computer Center in 1971 and the later addition of the Rich Chiller Plant in 1985.

The following descriptions apply to “Old Rich” and the Calculator Building, except where noted. Description of the 1971 Rich Computer Center and the 1985 Rich Chiller Plant follow.

### Structure

Foundations were not directly observed, but historic images and descriptions indicate that foundations consist of concrete grade beams and internal concrete footings. The ground floor is slab on grade. The second floor and roof are concrete slabs supported by concrete beams longitudinally spanning perimeter walls and internal columns.

The Rich building retains the round concrete columns that once featured prominently on the north elevation’s original two-story setback [Figure 6]. One can be seen in a mechanical room on the second floor. The others are hidden in walls.

### Roofing

The main roofs are low slope with built up roofing material, TPO roofing clads a portion of the roof over the original two-story hyphen.

### Exterior Walls

Exterior walls are composed of infill structural clay tile with a red brick veneer. Concrete components include continuous sills and projecting canopies over the window banks. The Calculator Building also features continuous concrete transom dividers, identical to those found on Hinman. The Rich building’s concrete headers have a shaped profile that differ slightly from the squared profiles found on the Calculator Building

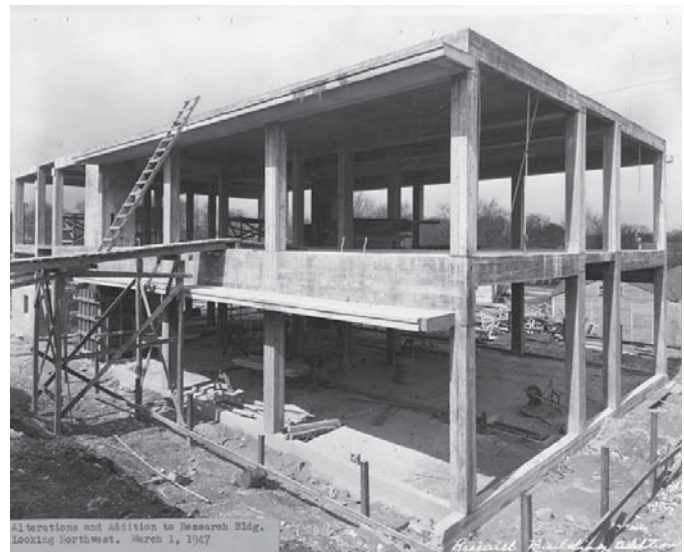


Figure 10: Calculator Building under construction, March 1, 1947. Georgia Tech Library, Archives and Special Collections.



Figure 11: View of Hinman Research building addition wing (center) and Calculator Building (right), looking northwest.

(and Hinman).

## Windows

Original steel windows on the Calculator Building typically appear in pairs of two divided by brick mullions. The steel frames are composed of a lower awning sash and an upper fixed sash. A continuous concrete band separates the lower units from an awning sash transom. All of the windows on the north elevation are hidden by new construction and boarded over on the interior. Windows on the south elevation are visible from a courtyard formed by the Calculator Building, Hinman, and the Connector Building.

Original aluminum windows on the north and south elevations of the Rich building are set in continuous bands and are composed of three-part units; a lower awning sash and fixed middle and upper sash. All of these windows are boarded up and hidden behind the 1971 and 1985 construction. An additional fixed window assembly is located on the original west elevation of Rich and is extant and still visible. It is composed of four orthogonal glazed aluminum frames in a Mondrian panel [Figure 14]. Below this window assembly is a concrete canopy and glass and aluminum entry (described below).

The interior of nearly all windows, except the ones located on the second floor on the south side of the Calculator Building, have been boarded up. Sills and mullions remain in place. Sills in the Calculator Building are pink marble, in the Rich building the sills have been painted.

## Doors

Only one original door assembly remains and it is located on the original west elevation of the Rich building. The aluminum and glass door, full-size sidelight, and two fixed transom windows are original to the building [Figure 14]. Above the door is an original concrete canopy and aluminum window assembly (described above).

There is a light fixture receptacle cast into the concrete,



Figure 12: View of Old Rich's windows from a mechanical chase between the building and New Rich.



Figure 13: Calculator Building ground floor windows, south elevation, boarded up from the interior.



Figure 14: Original entry at west end of Old Rich, retains window and door assembly and concrete canopy.

however, the light fixture does not appear original.

## Interior

The interior finishes and room configurations of both the Rich and Calculator buildings have been altered, but retain several elements of their original design, including the double-loaded corridor plan, two stairwells, several doors and other interior features and finishes described below.

### Interior Walls and Wall Finishes

Typical original interior walls are clay tile with a painted plaster finish. Over time, walls have been removed and others added (see diagrams in Developmental History). New walls are composed a variety of materials, but typically are wood or metal stud walls with painted gypsum board finishes.

### Flooring

All floors are carpeted with the exception of the landing at the second floor, between Rich and the Calculator Building. This floor retains its original resilient tile in a red and black checkerboard pattern [Figure 15]. It is possible that similar tile, seen in historic images, will be found below carpeting in some areas.

### Ceilings

All ceilings are contemporary suspended metal grids with acoustical ceiling tile. Where the area above the suspended ceiling could be observed, no earlier ceiling was identified, only the underside of the concrete structure.

### Doors and Louvers

All doors are flush slab doors. The Calculator Building retains its original vanished doors and their brass hardware. There is also an original wood mechanical louver located at the west end of the first floor corridor of the Rich Building [Figure 16].

### Lighting

All lighting is flush mounted fluorescent fixtures

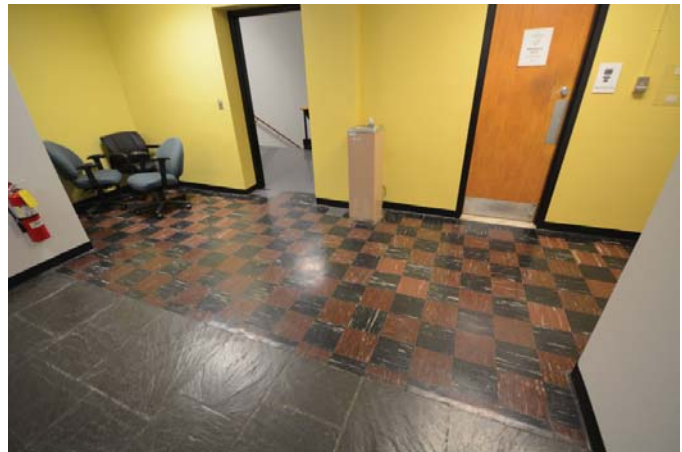


Figure 15: A portion of the original flooring at the second floor landing between Old Rich (left) and the Calculator Building (right).

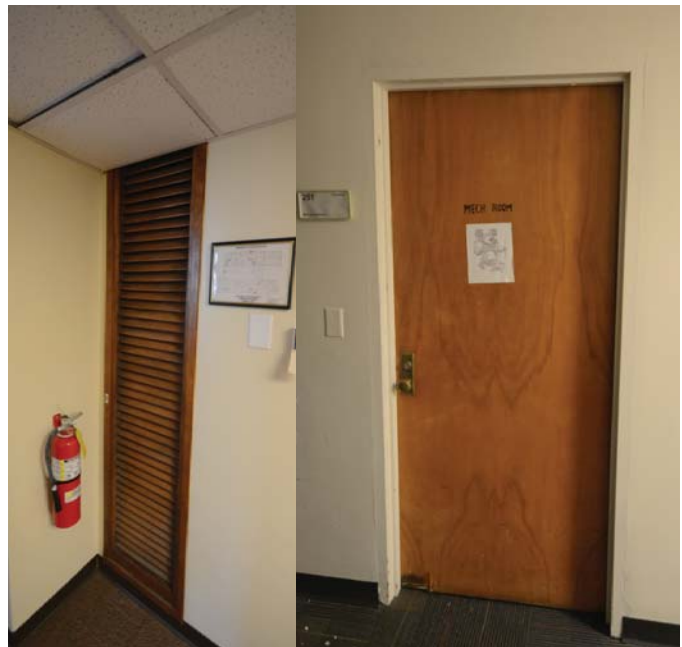


Figure 16: Left; original mechanical louvered panel on the second floor of Old Rich and right; an original wood slab doors in the Calculator Building.

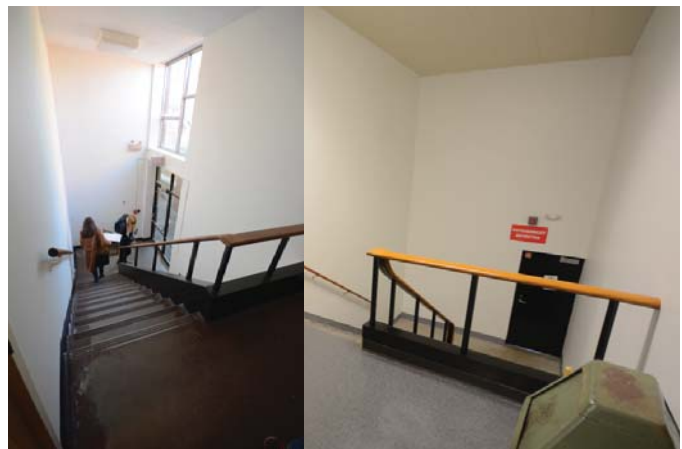


Figure 17: Original stairs in Old Rich (left) and the Calculator Building (right).

embedding into the suspended ceiling grid.

### Stairs

Both buildings retain original stairs at their southwest corners. The stairs are in enclosed stair halls and include a landing and a straight run. The stairs are concrete with embedded metal traction strips. Round handrails are mounted to the wall side, with the stairs in the Rich building retaining their original goose neck hardware. Opposite, there is a short concrete stringer wall with embedded square metal posts supporting a continuous wood hand rail [Figure 17].

## 1971 Rich Computer Center

The “New” Rich Computer Building is a significant divergence from the form and material palette of the older buildings. Where the Calculator Building and “Old” Rich were designed and constructed as a continuation of the designs of Bush-Brown Gailey and Heffernan, the 1971 Rich Computer Building rejected those precedents for a form and material palette that was distinctly different. The new Rich building swallowed up the older buildings and hides their north and west elevations.

The building is two stories with a red brick clad ground floor level and a steel and glass second floor penthouse. The second floor has a reduced footprint and is surrounded by an occupiable roof terrace.

### Structure

Foundations were not directly observed. From historic images, the foundations appear to be concrete footing below columns and concrete grade beams below perimeter walls composed of concrete masonry units. The ground floor is likely concrete slab on grade. The structure of the second floor and roof were not observed but are likely a hybrid steel and concrete composition.

### Roofing

Roofing at the terrace level is composed of composite pavers with inset panels of brick unit pavers [Figure 19]. Roofing at the penthouse level is a composite bituminous sheet material.



Figure 18: “New” Rich’s below-grade west entrance.



Figure 19: New Rich under construction, c. 1971. Georgia Tech Library, Archives and Special Collections.



Figure 20: Glass, steel, and brick penthouse level of New Rich.

## Exterior Walls

Exterior walls at the ground level are clad in a veneer of red brick. Ground floor walls are largely windowless except for several recesses in an array of quarter-round radii. Second floor walls are either featureless brick veneers, including where walls overclad Old Rich and the Calculator building's facades, or steel and glass wall assemblies.

## Windows

Windows at the ground level are typically fixed, tinted, gasketed full-height panels. At the penthouse, windows, also tinted and gasketed, are fixed within a curtain wall systems with painted steel frames.

## Doors

There are several entries to the building, though without a hierarchy indicating a primary entrance. Entrances, like windows, are recessed. The door assemblies are composed of glass and steel. Above the doors are recessed concrete panels that break up the monotony of unadorned red brick walls.

## Interior

### Interior Walls and Finishes

Most interior walls are composed of painted concrete masonry units in stacked coursing. Overlooking the two large server rooms are glazed and paneled wall assemblies with painted metal grids and opaque transoms [Figure 21].

### Flooring

Ground floor corridors are exposed concrete slab. The two large server rooms feature sunken floors with removable tiles to facilitate maintenance to the extensive wiring required for these spaces. Upper floor corridors and offices are carpeted.

### Ceilings

Ceilings are suspended grid systems with acoustical ceiling tile.

### Doors

Most doors are flush slab doors, except for glazed metal doors in the glazed partition walls.

### Lighting



Figure 21: Fixed window at the ground floor of New Rich.



Figure 22: Corridor in New Rich with concrete masonry unit walls on left and glass and steel wall on right.

Typical lighting is flush mounted fluorescent fixtures set into the suspended ceiling grids. There are several down lights in select locations.

### Stairs and Vertical Circulation

There are several stairs in the building, which is at a half-floor height difference from the earlier buildings it is appended to. Stairs are metal with wood clad risers and treads of slate [Figure 23]. At several stairs, lifts have been provided for accessibility.

Guardrails are composed of steel structure with stained and varnished wood panel infill and painted tubular hand rails.

## 1985 Rich Chiller Plant

The Rich Chiller Plant building is a utilitarian structure inserted into a space between Old Rich and Hinman in such a way that it only required one wall and a roof structure to complete the building.

### Structure

Foundations were not directly observed. The one independent wall is composed of concrete masonry units clad in red brick. Concrete masonry units infill areas of the formerly exterior walls of Old Rich and the Hinman buildings which are otherwise exposed and painted. The roof structure is composed of steel beams supporting corrugated metal decking. There are also steel columns with cross-bracing. The bi-level floor is concrete with several interior stairs connecting the two levels.

### Doors

Doors are metal slab doors. There is also one metal overhead door on the west elevation.

### Windows

There are several small fixed windows with tinted glazing on the west elevation.

### Interior

The interior is an open space with no distinctive features other than the concrete stairs with metal tube hand and guard rails. Interior walls, including the formerly exterior wall of the other buildings, and steel structural elements are painted. The floor is the exposed concrete slab. A variety of mechanical equipment occupies the space.

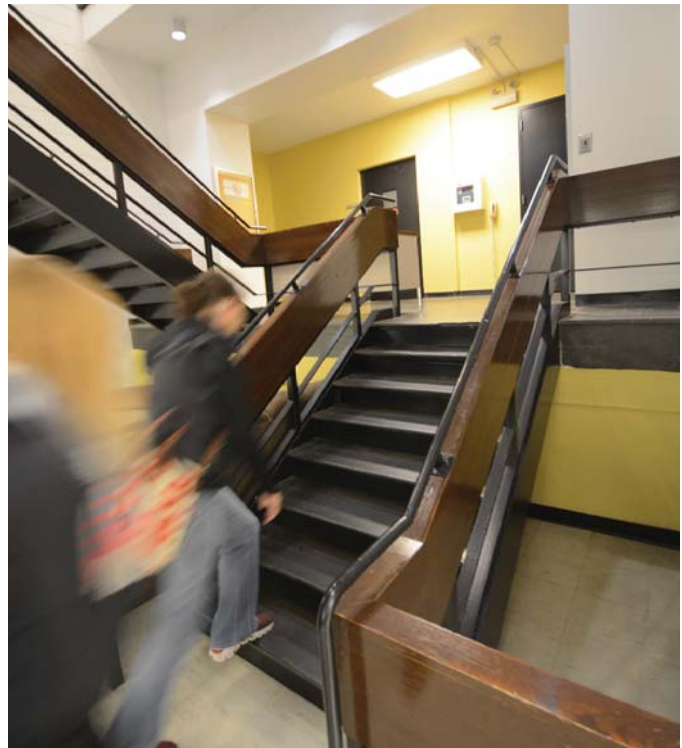


Figure 23: Main stairs in New Rich provide access to both floor of Old Rich and the Calculator Building.



Figure 24: Interior of the Rich Chiller Plant showing exposed, painted structure.

## Statement of Significance

The 2009 Campus Historic Preservation Plan (CHPP) identifies the Calculator Building as a significant building within a grouping of buildings that represent the period of postwar growth of the campus from 1946-1960. Additionally, the building is considered significant for its architecture, which represents the work of Bush-Brown, Gailey & Heffernan with Heffernan as the lead designer. The Calculator Building, along with the Hinman Building, was recommended eligible as part of a Modern-era National Register of Historic Places District on campus.

“Old” Rich was also recognized as significant under the National Register Criteria A (associated with events that have made a significant contribution to history) and C (for architectural value). However, the CHPP recommended the building as not eligible, due to a loss of integrity from the construction of the 1971 Rich Computer Center. This evaluation is understandable, given that the scope of the assessment likely did not allow researchers to access the mechanical area ways where the intact exteriors of the building are visible. As well, the 2009 CHPP did not evaluate the 1971 Rich building because it had not yet attained 50 years of age.

Both the Calculator Building and the 1955 Rich Electronic Computer Center should be considered eligible as part of the proposed Modern-era National Register District. The 1955 Rich building represents a continuation of the design and planning efforts of Bush-Brown, Gailey, and Heffernan, embodies the materials and forms associated with the International Style promulgated on the campus during this period, and retains integrity, despite being presently concealed. As well, the 1955 Rich building represents a significant shift in campus architects; perhaps the first campus building of the modern era not designed by campus architects Bush-Brown, Gailey, and Heffernan.

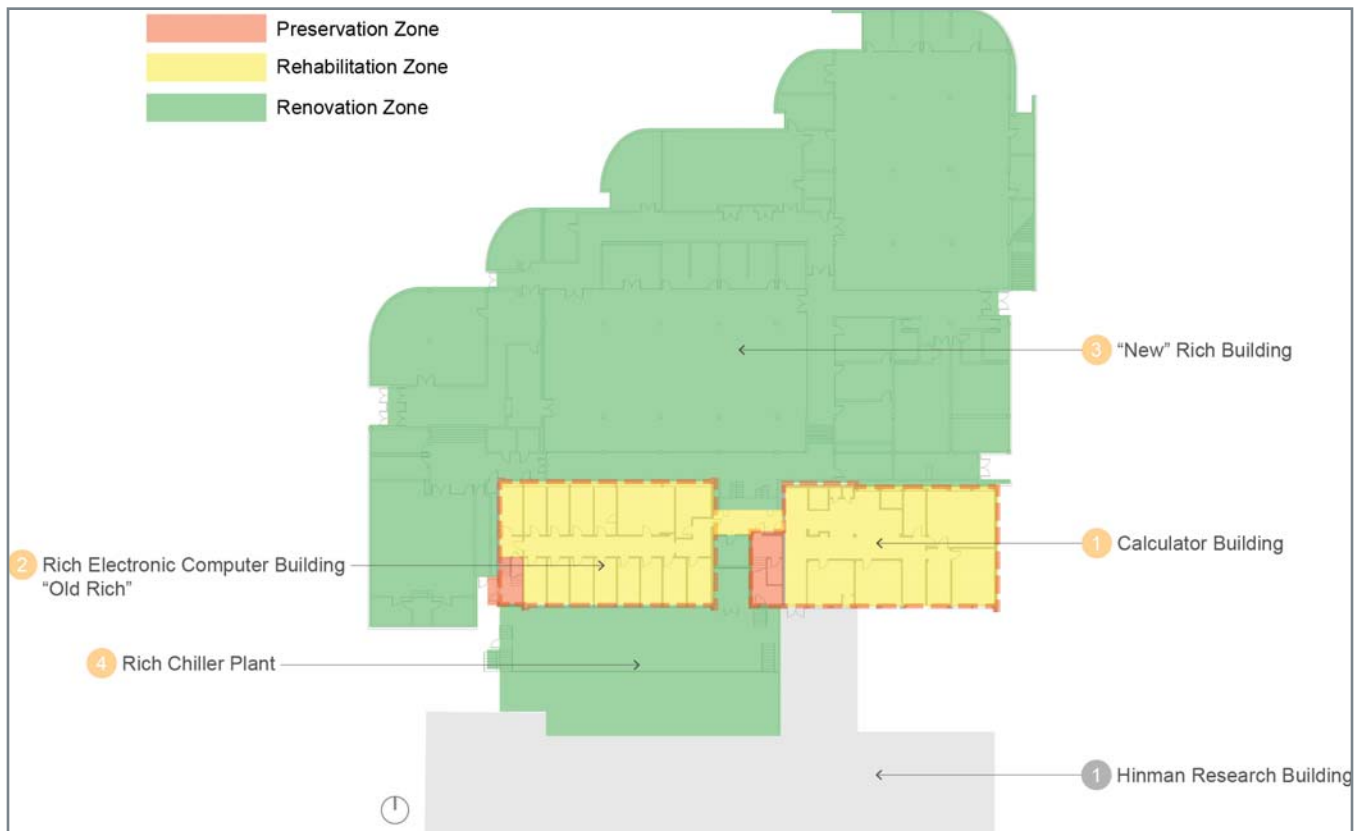
The 1971 Rich Computer Center is 50 years old as of the writing of this report. Though the 50 year rule is not absolute in dictating whether a resource is evaluated as historically significant, it does provide a benchmark for evaluation. The expanded Rich building, however, does not embody the significant Modernist characteristics of its predecessors and would not be considered a part of the proposed Modern-era district. The design of the 1971 Rich building approaches a popular trend of the time, what is now called Brutalism, and embraces an aesthetic of blank walls, curvature, and an inward focused plan. The experimental design was conceived by Cooper Cary Architects, a well-known and prolific firm in Atlanta. The building may be considered individually eligible under Criterion C for its architectural design and as representative of the work of a renowned firm.

The 2009 CHPP organizes the Calculator Building within the Institutional Value Category 1 for long-term preservation. Category 1 resources are “elements of the built environment that are worthy of long-term preservation and investment. These are resources that are highly valued by the institution, contribute significantly to its history and campus character, and can be adaptively used to meet the Institute’s educational mission.” By extension, the 1955 Rich building should be similarly organized.

The 1971 Rich Building is recommended to be placed in the Institutional Value Category 3 – Limited Potential for Preservation. Resources in Category 3 “possess some historic and aesthetic merits but have limited potential for adaptive re-use, and are not critical to the mission-based educational needs of the Institute. These resources may be candidates for removal or replacement with facilities that better serve the current mission of the Institute.”

## Preservation Zones

Based on the identification of extant, character-defining features and institutional value, the following zones have been identified to guide future treatment and use decisions. Preservation zones represent areas that retain historic material and embody important characteristics of the building design. Rehabilitation zones include areas that have the potential to recapture significant spaces and features. Renovation zones represent areas that do not retain significant features or spaces.



## Character Defining Features and Spaces

- Rich Building West Entry [Figure 14]
- Rich Building Concrete Columns [Figure 6]
- Rich and Calculator Stairs [Figure 17]
- Rich and Calculator Exteriors [Figure 12, Figure 13]
- Rich and Calculator Landing [Figure 15]
- Rich and Calculator Historic Floor Plans



PART I.II  
CONDITION ASSESSMENT

## Condition Assessment

Overall, few significant conditions of concern were observed. Generally, the exteriors show signs of weathering and age, including biological staining and mortar erosion. Windows, where they exist, exhibit oxidized frames, failing seals, and broken glass.

Several conditions appear to be associated with the building's under-use, including general wear-and-tear (stains, scuffs, scratches, etc.), though the time of year of observations (Summer) and conditions of the past year (pandemic) have likely been a significant influence. Other observations include limited accessibility of entrances and vertical circulation.

## Calculator Building and Old Rich

### Structure

No structural engineering assessments were conducted as part of this study. No observations were made that indicate the need for a structural assessment.

### Roofing

Based on available building records, the roofs are likely beyond their serviceable life and will require replacement.

### Exterior Walls

The exterior of the Calculator Building's south elevation (one of the only locations where an exterior wall is exposed) exhibits soiling and staining associated with environmental weathering and unabated water flow [Figure 25]. There is also an abundance of Mud-Dauber Wasp nests on the underside of the concrete canopies and banding. Rain water flow may be mitigated at the parapet by repairing and maintaining flashing and drainage systems.

The concrete canopy at the west entrance to Old Rich also is weathered and stained. There is a non-original light fixture in an original receptacle; both are rusted.

### Windows

Exposed, original steel windows on the Calculator building are rusting and do not appear to be regularly serviced.

### Doors

The original and extant door and window assembly on the west elevation is in stable condition, but does require some maintenance to remove oxidation from



Figure 25: Stains and insect nests are visible on the exterior surfaces of the Calculator Building.



Figure 26: Concrete canopy at west entrance to Old Rich.

metal components. Glass panes should be replaced as needed.

## Interior

Finishes in the Calculator building and Old Rich are typically non-historic (except where previously noted) and in stable condition, albeit showing typical signs of wear and tear.

### Flooring

The checkerboard flooring on the second floor landing is stable.

### Ceilings

Ceilings are non-historic and stable.

### Doors and Louvers

Varnished, flush slab doors in the Calculator building are typically operational. Some doors feature altered or added hardware that is visually not compatible with the original brass hardware. Non-historic doors are also operational and no deficiencies were observed.

### Stairs

Both stairs are stable and retain appropriate handrails and guardrails.

## 1971 Rich Computer Center

### Structure

No structural engineering assessments were conducted as part of this study. A crack in a site wall by the west entrance may indicate some settling in that location. Evidence of past repairs to masonry, including applications of sealant in horizontal mortar joints [Figure 31], described below, may indicate issues with masonry backup or brick ties.

### Roofing

The concrete and brick paver roofing exhibits significant signs of weathering and past remedial activities [Figure 28]. However, no interior signs of water infiltration were observed.

Joints between concrete pavers appear to have been modified by saw-cutting additional joints and in a



Figure 27: Interior office in the Calculator Building showing typical finishes and conditions. Note the boarded up exterior windows.



Figure 28: 1971 Rich building roof showing spalling concrete and sealant in joints.

majority of joints, a white sealant material has been applied. Vegetation has been allowed to take hold in many areas around the roof and evidence of poor drainage and ponding is abundant.

## Exterior Walls

Walls are stable and typically are in need of cleaning. Some evidence of inadequate roof drainage appears as dark staining below parapets and scuppers. In some areas, sealant has been installed into joints, which may inappropriately retain moisture inside the wall in those areas.

Generally, vegetation is too close to exterior walls and produces humid micro-climates that increase biological growth.

## Windows

Many windows, especially at the penthouse level, were observed to have internal condensation, indicating failed gaskets - typical of windows of this age. Several panes were also observed to be cracked.

## Doors

There are several entries to the building that are not universally accessible. The east entrance at the penthouse level has been modified with an apron. This entrance is approached from a walkway where a section of parapet appears to have been removed in the past.

## Interior

### Interior Walls and Finishes

Two locations on the interior were observed to have water staining related to leaking (or condensing) mechanical systems. At one location, a note on the wall above the ceiling reads "Always Leaks". At another location, in one of the main server rooms, the leak is above electrical panels [ ]. Some efflorescing of the concrete masonry units composing the wall was observed.



Figure 29: 1971 Rich building wall with sealant in mortar joints.



Figure 30: Penthouse windows showing fogging (condensation) and cracks.



Figure 31: Water stains are visible on the wall (center) in one of the server rooms.

### Flooring

The exposed concrete floors on the ground floor appear to have been patched and repaired over time. Flooring in general appears stable but in need of maintenance or replacement.

### Ceilings

The suspended grid systems and acoustical ceiling tile appear stable.

### Doors

Flush slab wood doors, flush metal doors, and glass doors all appear operational, though with overall wear and tear.

### Lighting

Lighting appears adequate and in most cases to modern specifications.

### Stairs and Vertical Circulation

There is minor wear and tear to the slate stair treads where portions of the projecting nosing has chipped and broken [Figure 32].



Figure 32: Chipped nosing on the slate treads in New Rich.

## 1985 Rich Chiller Plant

No structural or mechanical engineering assessments were conducted as part of this study.

### Exterior

There is a crack in the brick veneer of the west wall of the Rich Chiller Plant. The crack extends from the bottom corner of a window opening to the top corner of the overhead door opening [Figure 33]. The likely cause of the crack is from normal settlement.

### Interior

Because the interior is largely composed of structural and mechanical components, this assessment is limited to finishes, perimeter walls (which are largely composed of the formerly exterior walls of other buildings), stairs, windows, and doors. No significant conditions of concern were observed in these interior features of the Rich Chiller Plant. Minor conditions include some step-cracking in veneer masonry units from normal building movement and some staining of the concrete slab where there have been past mechanical leaks.



Figure 33: A large crack in the veneer (center) extends from the window sill to the corner of the overhead door opening.

# PART II

## TREATMENT AND USE

## Approach to Treatment and Use

Rich Electronic Computer Center and the Calculator Building no longer house the massive computer systems they were originally designed for. However, both buildings continue to house classrooms and offices related to Computing and Research activities at Tech, carrying on the academic traditions original to their use. The New Rich building houses two large server rooms and several offices.

### Period of Significance

Collectively, the buildings' Period of Significance begins with the completion of the Calculator Building in 1947 and end around 1971 when the new Rich Computer Center was completed - and at the end of the historic period (i.e. 50 years) The new Rich building took over the role of housing the college's computer systems.

### Historic Preservation Objectives

The objective of the proposed treatments described below is to rehabilitate the Calculator Building and the Rich Electronic Computer Building ("Old Rich"). Rehabilitation would include safe and functional use while preserving and restoring the spaces, assemblies, features, and materials important to the building's period of significance. The 1971 and later additions to the Rich Computer Center, though some features are 50 years old and thus could be considered historic, are not of significant preservation value to the University. Recommendations for features associated with the later buildings are for safe and functional use, assuming the buildings would be retained and largely unchanged.

### Requirements for Treatment

Several laws, regulations, and functional requirements are applicable to the treatment and use of a historic property. In addition to preserving historic properties, these considerations also address safety, fire protection, universal accessibility, abatement of hazardous materials, and energy conservation. There are at times points of informed judgment to define the best path to preservation and stewardship of the resource between the various guidance and conditions. The challenge in determining proper treatment is to meet the requirements for life safety while retaining and restoring historic contributing fabric.

#### Accessibility

The Americans with Disabilities Act of 1990 (ADA) is a set of protections of the civil rights of people with disabilities. The law requires that publicly-accessible properties allow for equal access by persons with disabilities. For many historic properties, designed prior to the implementation of ADA requirements, reaching ADA compliance can be at odds to the Secretary of the Interior's Standards, and even directly threaten the integrity and preservation of significant character-defining features. Where this may be the case, the ADA allows for a process that seeks to find alternatives to compliance that minimize harm to a historic property and meet the intent of the law rather than the letter of the law. Further, the ADA law recognized the challenges of preserving historic resources and allows for alternative minimum techniques for compliance where merited.

Neither Rich or Calculator have been modified for accessibility. However, a lift at stairs associated with the new Rich building provides accessibility to the first floors and connecting corridors from Hinman provide accessibility to the second floors. There is a modified accessible entrance at the east end of the second floor of New Rich that can be reached from an at-grade path from 4th Street that connects to the roof terrace.

## Abatement

It is not known if abatement and removal of hazardous materials has already been completed. Because of their age and intact historic material, both buildings are likely to have asbestos-containing materials, potentially found in vinyl flooring, flooring mastic, window glazing and sealant, and pipe insulation. Lead may be found in early painted finishes.

## Fire Protection

The fire protection systems were not assessed as part of this report.

## Treatment Recommendations

The following recommendations for treatment, including alternate solutions, are presented to be consistent with the guidance in the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Standards for Rehabilitation (<https://www.nps.gov/tps/standards/rehabilitation/rehab/stand.htm>).

## Calculator Building and Old Rich

### Structure

The structure of the two buildings defines the dimensions of their interior, roughly 8'x16' grid on either side of a wide corridor. Continued use of these buildings should maintain the double-loaded corridor with rooms at 8-foot, 16-foot, 32-foot, or 40-foot widths, as appropriate and at the discretion of the program and design.

### Roofing

Based on available building records, the roofs are likely beyond their serviceable life and will require replacement.

### Exterior Walls

Where exterior masonry is exposed (e.g. the south and east elevations of the calculator building), cleaning and tuckpointing is needed.

### Windows

Exposed, original steel windows on the Calculator building are in need of restoration. The windows on the Hinman building appear to have been rehabilitated and provide a good baseline for the work on the Calculator. It is likely infeasible to re-expose the windows on Old Rich, due to programming in New Rich and the differences in floor heights, which may put the Old Rich windows between floors [Figure 34].



Figure 34: Architects illustration of a proposed cross-section of the New Rich Computer Center that includes cross-sections of Old Rich and Hinman (right). Note that the floor levels between Old Rich and New Rich do not align.



## Doors

The original and extant door and window assembly on the west elevation of Old Rich should be maintained; painted metal components should be refinished as needed, glass replaced as needed, and the historic light fixture restored.

## Interior

Finishes in the Calculator building and Old Rich are typically non-historic. No historic finishes were observed, however, a finishes analysis may identify original finishes and provide color scheme information for any potential restorative work on the interior. Generally, the interior plan reflect the original double-loaded corridor plan.

### Flooring

The checkerboard flooring on the second floor landing should be preserved.

### Ceilings

Ceilings are non-historic. Historic ceilings appear to have also been suspended grid systems with acoustical ceiling tile. Continuing the use of these systems is preferred.

### Doors and Louvers

Varnished, flush slab doors in the Calculator building should be retained. New doors in either building should be designed to match in size, type, and finish. Original hardware should be restored and new hardware selected to match.

### Stairs

Both stairs should be retained and their features preserved and maintained.

## 1971 Rich Computer Center and 1985 Rich Chiller Plant

The “New” Rich Computer Building and the Rich Chiller Plant are recommended to be placed in Institutional Value Category 3. Features and elements of either building are not identified for preservation. The overall exterior form, including large expanses of blank walls, radiused walls, and other elements of the Brutalist Style may be features worthy of academic study and documentation prior to a significant renovation.

Removal of either or both buildings, or significant adaptation, would provide opportunities to restore and rehabilitate Old Rich and the Calculator Building.

## Structure

A structural engineering assessment is recommended to provide a better understanding of the range of options available for adapting the structure to new uses and potentially, additional volume.

## Roofing

Based on available building records, the roofs are likely beyond their serviceable life and will require replacement.

Though no observations of leaks from the roof were made in the interior of the building, the overall drainage system and insulation could likely be improved.

## Exterior Walls

All exterior walls require cleaning and tuckpointing of masonry joints as needed. Removing vegetation that is within six feet of the building is recommended.

## Windows

All glazing should be replaced and metal framework of the penthouse level refinished.

## Entrances

Generally, all entrances suffer from a lack of visibility and universal accessibility and would be improved by removal of several site walls, removal of some trees and regrading those areas, new ramps, and even creating a new at-grade entrance at 4th Street.

## Interior

Finishes in the 1971 Rich building do not need to be preserved or restored. Generally, finishes are worn and require renovation or replacement. Identifying persistent leaks in mechanical systems and repairing them should be undertaken prior to any work on interior finishes. Slate stair treads that are broken should be replaced or repaired.

