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Observatory
1. Statement of Significance

The University of Saskatchewan Observatory is a charming building and an iconic symbol of the University of Saskatchewan. In his annual report, the first president of the university, Dr. Walter Murray called the Observatory, “a gem of beauty and convenience,” and cited the Observatory and the Memorial Gates as the most beautiful structures on the campus. The Observatory was constructed in two parts between 1928 and 1929; the tower was built first, followed by the classroom. The telescope housed inside was funded by private donations. The Observatory’s most important character-defining elements are its distinctive domed tower and its Collegiate Gothic style and materials. The building is composed, like many at the university, primarily of local ‘greystone’. Indiana Limestone, granite, copper and oak complete the list of materials. This building has been used continuously as an observatory since its construction. Both its exterior form and its basic interior spatial configuration have been maintained intact since its construction. For these reasons, the Observatory is a significant heritage asset of the University of Saskatchewan.
2. Character - Defining Elements

2.1 Form

Although diminutive in scale, the Observatory is composed of three distinct volumes, corresponding to its three principal rooms. A circular form with a domed roof houses the telescope, a larger central volume with a flat roof originally accommodated a lecture theatre, and a smaller volume, rectangular in plan and with a pitched roof, housed a transit. The 18-foot diameter dome (Figure 1) and its stone tower are important character-defining elements, identifying the building as an observatory. The three volumes are arranged symmetrically about a longitudinal axis.

The human scale of the building is also a formal character-defining element.

Figure 1. The Observatory in 1966 with its original dome. A sundial is visible on the exterior. Photo A-4517, retrieved from http://scaa.sk.ca/gallery/uofs_buildings/
2.2 Materials

The exterior materials of the building, particularly its 'greystone' walls, define the Observatory as part of the University of Saskatchewan. Indiana limestone was used for decorative trim, while the entrance steps and building base are made of granite. Figure 2 shows these materials.* The most prominent feature of the building is its domed observatory roof, clad in aluminum. This dome replaced the original dome of wire and papier-mache in 1976 (University of Saskatchewan Archives. U of S Observatory, Kennedy Additions - Box 7). The flat roof of the central volume is concealed behind a stone parapet, but is roofed with tar and gravel. The volume corresponding to the transit room features a pitched roof which was originally clad in slate tiles, but now has asphalt shingles. A unique material feature of this building that has survived is the copper dormers. These are retractable, and originally provided access to the sky for the transit. The copper roofing has weathered over time, turning a deep shade of green and brown, as shown in Figure 3. The same material is found along the roof ridges, flashing and gutters. Decorative wooden rafter ends appear under the eaves (Figure 3). Figure 4 shows the material of the current dome.

Windows, shown in Figure 5, are framed in rolled steel. The interior window surrounds are made of oak and the windows are operated with bronze or brass hardware. The windows on the upper level are in excellent commemorative condition save for a few broken panes in the transit room. The interior oak doors of the building all exist in excellent commemorative condition save for the door to the telescope room which has been replaced. Figure 6 shows the material of one of the original doors. The surround to the immediate right of the entrance shows some wear. The entrance door itself appears to have been replaced in kind. The new door is lighter in color than its interior counterparts; however, it appears to have been constructed to match the original in material and design. The door surround appears to be original.

* For further information on building stones used at the U of S, refer to 'Appendix: Stone.'
The floors of the building no longer contain heritage value, having undergone renovation to vinyl composite tiling. The walls of the upper level maintain heritage value with the maintenance of brick wainscoting topped by plaster on lath and crowned with an oak molding. Figure 6 shows the brick. Specifications show that the interior of the classroom was clad in 'Tee Pee Moka Brick.' The former classroom has retained a blackboard made of slate and framed in oak; a significant character-defining element that has been well maintained. Throughout, the Observatory has character-defining brass ventilation grilles with brass pulls.

The commemorative integrity of the basement materials have been compromised. Brick walls, windows, brass grilles and pulls have been painted. Figures 9 and 10 show cases in which painting has compromised material integrity. The space under the dome has been completely re-clad to become a museum space. See Section 2.5, Spatial Configuration.
2.3 Style

The Observatory is nominally Collegiate Gothic in style, although its detailing is relatively subtle. Limestone string coursing, stone parapets and an arched entrance door are its most prominent gothic features. (See Figure 11).

The entrance to the Observatory is Gothic in style, with a Gothic arched transom. See Figure 11. Some Arts and Crafts detailing is also discernible in the design of the door, which features lites along its top third. This door is a character-defining element due to its material, design and craftsmanship. The original oak interior doors also have heritage value - see Figure 12.

2.4 Location

The observatory does not appear on the 1909 Campus Plan by Brown and Vallance; however, the location of the building has not changed since its construction. The location and orientation of the building is delicate as it provides an unhindered view of the night sky for both telescopes (Figure 14). Unlike most contemporary buildings at the university, the Observatory is oriented according to the cardinal directions, presumably in support of its function.

Figure 14. The location of the Observatory is indicated in green on this contemporary campus map.
2.5 Spatial Configuration

The original floor plans of the building are shown in Figure 15. The ground floor has maintained its commemorative integrity; the layout is still as it was originally. Shown in Figure 16, the round telescope room is a character-defining room due to its unique curved walls and high domed ceiling. The basement, however, has been heavily reconfigured. The central space which originally housed only the furnace and a small washroom has been further subdivided to accommodate a kitchenette, an additional washroom and a mechanical room. One basement window has been reclaimed for mechanical use having been retrofitted for ventilation. The eastern work room has been expanded with the removal of a wall separating that space from the coal bin. The configuration of the western work room has changed with its conversion to an exhibition space. (See Section 2.7 Uses). The tall windows in this room have been covered over. Figure 17 shows that the room is now very dark; the windows are still visible from the exterior but are no longer operable from the interior.
2.6 Systems

The Observatory’s structure is composed of load bearing concrete and stone walls on concrete strip foundations. A unique structural feature of the building is the inclusion of two very large concrete columns. The columns are located under the two telescopes in the building to prevent any vibration or movement that might hinder the functioning of the instruments. These large character-defining elements are visible in the section shown in Figure 18.

The Duncan Telescope is still in its original location. The instrument was ordered from T. Cooke & Sons. In the 1970’s it saw major refurbishment, including the replacement of its 7” lens with a 6” model. The Duncan Telescope is a character-defining element.

The large telescope gains access to the night sky by means of a motor-operated sliding door in the dome (Figure 21). The original dome had a hand operated door. The original wire and papier-mache dome was replaced by an aluminum dome in April, 1976 (University of Saskatchewan Archives. U of S Observatory, Kennedy Additionals - Box 7). An astronomy enthusiast near Saskatoon reclaimed the original dome and it now serves as the dome on an amateur observatory. The current dome was manufactured by the Ash Manufacturing Co. in Plainsfield, Illinois. The form and functionality of the dome is a character-defining element.
Another character-defining system found in the building exists in the transit room on the ground floor. There the roof can be opened to reveal the sky to the north and south. Copper-clad portions of the roof can be raised by a hand crank. The mechanism (Figures 19 & 20) is intact on the north side of the room. The mechanism on the south side appears to have been disabled.

When the Observatory was built, its location was so removed from the other campus buildings that the cost to run a service tunnel to provide heat, light and power to the small building proved prohibitive. It was originally constructed with a coal bin and coal furnace to provide warmth. Living quarters were provided for in the building in order that the furnace could be kept stoked. The coal burning system was removed when gas was provided to the building.

2.7 Use(s)

The building has been used for astronomical study since its construction. The dome has always housed a telescope and the classroom maintains its original function. Originally the basement housed a furnace room, two work rooms, one washroom and a coal bin. Physics students, sometimes in pairs, lived in the basement and kept the coal furnace stoked in return for the use of the quarters. The work room has been remodeled to become a museum and exhibition space (Figure 17). When a natural gas line for heating was run to the Observatory, the coal bin was removed in order to create a larger work room. A kitchenette and an additional washroom have been added. (See Section 2.5, Spatial Configuration).

The Duncan Telescope saw gradual mechanical deterioration and slowly fell into disuse by 1964. In that year, amateur astronomy groups in Saskatoon renewed the use of the telescope and assisted in opening the Observatory for public viewing. By the 1970’s the Observatory was used almost exclusively for public outreach and free tours were run every Saturday night. Professor W.H. White opened the Observatory to the public weekly for a period of 18 years.
2.8 Cultural & Chronological Associations

Along with Field Husbandry (currently Archaeology), the Observatory was one of the last buildings erected in the first phase of construction at the University of Saskatchewan. The Great Depression put a temporary stop to any large projects after these buildings. Another important aspect of the heritage of this building is that the telescope it was built to house was funded by private donations.

3. Associated Objects

The basement exhibition space holds two objects of particular value to the astronomical community. A sextant originating in England circa 1820 was donated to the Observatory in 1951 by professor W.H. White (Figure 22). A Gregorian style reflector telescope made in 1727 by Francis Watkins of Charing Cross London is another instrument found in the space. The telescope features a mirror made of speculum, an alloy consisting of two parts copper and one part tin. In 1944-1945 a sundial (Figure 23) was designed and donated to the building by Professor W.H. White (University of Saskatchewan Archives, RG 2001.2, General Correspondence, White). It read:

I Am A Shadow  
So Art Thou  
I Tell Time  
Dost Thou  
?

This sundial was originally mounted on the south side of the building. The bottom portion of the sundial provides the ‘equation of time’ which, when used with the position of the shadow on the dial provides the correct time. After being restored several times it was removed and is currently being stored in the Physics Building. Photographic records place its removal between the years 1991 and 1996. The brackets that formerly held it are still in place.

A tablet in the telescope room commemorates those who donated funds towards the telescope. An initial donation of $500.00 by W.H. Duncan was the impetus for a fundraising campaign by the Saskatoon Board of Trade. The same is indicated by the wording on the plaque. (See Figure 24). The initial donor’s surname provided the title for the ‘Duncan Telescope’.

Figure 23. The sundial that formerly adorned the Observatory, ca. 1950. Photo A-914. Retrieved from http://scaa.sk.ca/gallery/uofs_buildings/

Figure 24. Plaque commemorating those who helped to purchase the telescope.
4. Supporting Documents

Facilities Management Division (2011). Asset Resource Database [Data File]. Retrieved from \usask\fmddfs\files\iis\IIS_Public\ARS


University of Saskatchewan Archives. Buildings and Grounds Department 2015, 11, Observatory.

University of Saskatchewan Archives, J.E. Kennedy fonds.

University of Saskatchewan Archives, RG 2001.2, General Correspondence, White

University of Saskatchewan Archives. U of S Observatory, Kennedy Additionals - Box 7.

5. Summary of Character - Defining Elements

Materials
- greystone walls
- Indiana limestone trim
- granite steps
- brass door & window hardware, grilles
- copper roof
- steel window frames
- oak doors and surrounds
- slate chalkboard
- brick wainscoting

Form
- round tower
- dome
- human scale

Style
- arched door opening
- gothic arched transom
- quoining
- dormer roof
- parapet
- oak doors
- wooden rafter ends

Location
- still located on original site
- visibility of night sky
- orientation relative to cardinal directions

Spatial Configuration
- round telescope room
- classroom

Systems
- retractable roof system
- slot door in dome
- concrete columns under telescope & transit
- Duncan Telescope

Uses
- astronomical observation and research
- education
- tours and public outreach
- museum

Cultural & Chronological Associations
- one of the last buildings erected before WWII
- telescope funded by private donations