



## Feasibility Study

**DATE:** April 5, 2016

**PROJECT:** Jamestown Opera House  
Platform Lift Feasibility Study

**SUBJECT:** Preliminary Progress Report

### DISCUSSIONS:

In late January 2016, the Jamestown Opera House Board engaged the team of Brentwood Builders and App Architecture to study the possibility of installing a Platform Lift in the Restored and Historic Jamestown Opera House.

The existing Auditorium space is on the Second Floor and currently difficult to access and egress for individuals with certain mobility impairments. It is inaccessible to individuals requiring wheelchairs. The owner's desire is to improve or provide accessibility to the Auditorium space.

Earlier investigations to install a commercial elevator or a smaller LULA (Limited Use/Limited Application) Elevator have proven to be infeasible due to space needs, suitable locations and costs. As a result a Platform Lift is being investigated.

After preliminary review, a location in the northwest Auditorium Entry Vestibule appears to show the most promise for access from both the entry level and main Auditorium floors. Albeit tight, it may provide the necessary area to physically install it.

App Architecture has performed preliminary code studies of the Ohio Building Code (OBC), ANSI 117.1 Accessibility Guidelines and ADA (Americans with Disability Act) Guidelines. It was coupled with information provided by the Savaria Lift manufacturer regarding limitation of the lifts travel.

A process was developed to meet with the Greene County Building Department, the Jamestown/Silvercreek Fire Department, the Cedarville Fire Department (mutual aid provider) and then with the State Elevator Inspector to discuss the project in an attempt to achieve preliminary consensus prior to entering a contract for construction documents or variance hearings.

To date, we have only met with the Greene County Building Department in a first meeting at their offices and again with a Greene County representative and the two Fire Department chiefs in a second meeting on site.

In general, when the usage of a space is changed or the dynamic of that usage, such as more individuals with mobility impairments or more severe disabilities, any modification is subject to other provision of the code which may be triggered to support that change.

The following is a summary of findings and discussions to date:

- **Lift Travel Distances:**
  - The Savaria V1504 Lift has the capabilities of travelling up to 20' for a single stop application. (The existing conditions are just over 19' floor to floor.)
- **NFPA 18.1 regulations for Platform Lifts:**
  - Lifts shall not travel more than 14' between stops or up to 16' with local jurisdiction approvals. *A variance to travel more than 16' will be required.*
- **Chapter 34 – Existing Buildings:**
  - The OBC allows for alternatives to full compliance with the code in order to maintain the historic character of a facility. *However, life safety is still a concern.*
- **Shaft Rating:**
  - The shaft should be rated. We discussed trying to eliminate the rating since the adjacent stair was not in an enclosed and protected shaft, however, because the floor cavity is so deep, of flammable (dry) wood frame construction, and susceptible to potential fire travel, it was felt protecting at least that area would be necessary. Some reasons for trying not to rate the shaft were to avoid added work to support the floor construction, minimizing wall thicknesses, avoid the installation of a rated ceiling inside the shaft, avoid protecting penetrations, and cost. *Greene County believes the shaft should be rated. The Fire Department representatives had concern about how quickly a fire could spread in the floor cavity of the facility. After discussing, we also believe it is a good and necessary safety measure.*
- **Accessible Route:**
  - **The entry to the building:** The entry needs to be accessible per ANSI 117.1. *The accessible entry currently does not have a proper ramp, landing and hardware at the door. The ramp and a section of sidewalk will need to be replaced. I believe we can challenge the door hardware upgrade given the historic nature of the facility.*
  - **The Accessible route to the lift:** Access to the lift will be good once in the facility, however, once you leave the lift on the Auditorium Main Floor the landing does not comply with the required ¼:12 slope. *Greene County believes we should address this by either building up the existing floor to create a flatter landing or leveling out the floor just off the elevator. The latter would be costly, and disruptive to the floor and character of the space.*
  - **Accessible seating areas for wheelchairs:** Assuming the purpose of the project is for individuals with mobility impairments to attend events/presentation and not just access the space to tour the facility, accessible seating will be required. *ANSI 117.1 require at least 2 spaces with adjacent companion seats for each location (based on an occupant load between 151 and 500. Greene County was willing to consider fewer if you had a policy to limit the number attending or the Fire Department determined that more disabled or individuals with mobility impairments attendees would be detrimental to their ability to evacuate them in an emergency. The fire departments were not able to state a quantity or level of disability they could support but expressed concerns that it will be very difficult to evacuate individuals with disabilities in a timely fashion should a fire occur. The seating area shall have a floor not greater than ¼:12. The existing proposed wheelchair seating area appears to exceed that slope. Greene County believes we should address this by either building up the existing to create a flatter floor or leveling out the floor under the seating and aisles that the wheelchairs will use. Both options could be costly, and disruptive to the floor as currently constructed and the character of the space.*
  - **Accessible Restrooms:** Access to an accessible restroom should be provided. Assuming it is accessible, we discussed possibly using the Senior Centers restroom if an accessible route to it can be provided. Otherwise, we may be asked to install a new accessible restroom. *Greene County would prefer an interior access route to the restroom which would be difficult with the floor level changes and narrow widths of existing doorways in the garage area. I believe we can challenge the internal access if there is a suitable accessible route outside the building to get there.*

- **Egress:**

- **Emergency Egress is required:** We need to confirm if the lift can be used as a means of egress to assist the fire department in getting disabled individuals out. There is a battery but it is unclear if that allows the lift to be both raised and lowered multiple times in the event of an emergency or power outage. *Regardless, the Fire Department expressed concerns with the numbers of disabled individuals and ability to evacuate them in a timely fashion. We talked through the locations that would be easiest to access them – the front two corners of the building through the windows.*
- **Regardless if the lift can be a means of egress:** Due to the speed of the lift there is concern those waiting would need to be in a protected area of rescue assistance. *An area of rescue assistance is fire rated space just off a stair, elevator or both that those needing assistance could enter and be protected for a period while waiting to be evacuated by the Fire Department. This protected environment would also need to be supported but rated structural components, so it would affect both the auditorium story and the lower floor level. There is currently no space that meets this requirement and it will be difficult and disruptive to provide. More discussion with the Fire Department and Building Department should occur if we decide to address this item, however initially locating these in the front two corners of the building would be best since even ladder trucks could be used to remove individuals in the event the stairs or floors became compromised or too dangerous to use.*

- **Fire Alarm/Smoke Detection:**

- Fire Alarms need to maintain minimum code standards with accessible notification devices.
- Smoke Detectors are provided and were seen as a positive means of early detection of a fire.

- **Lift - Logistical Items:**

- **The lift will only accommodate one person** in a wheelchair or maybe up to two individuals with other types of mobility impairments. *According to the manufacturer, it is not designed for heavy usage and should not be considered a primary means to access the upstairs by everyone.*
- **The lift travels 20' per minute.** Rather slow compared to a regular elevator. *It will take almost a full minute to travel the distance from stop to stop.*
- **Added Safety requirements:** Since it will be in an enclosed shaft, *the lift will require a phone and other safety features normally provided in a typical elevator.*

- **Estimates:**

- A platform lift installed will cost roughly \$69,900.
- An ADA restroom will cost around \$9,100.
- The upper level clear path of egress and way to the exterior stairs investment is estimated at \$4,442.
- The exterior ADA concrete ramp work leading into the building will cost approximately \$3,500.
- To construct the areas of rescue is estimated at \$27,985.
- The amount figured for a wheel chair sitting area is 4,100.
- Design and Permit Fees: \$20,000-\$25,000

\$ 144,027

The Building Department and Fire Departments were very helpful in trying to determine other methods for addressing the various items. They understood the challenges and appeared to truly want to look for ways to accommodate but conversely were bound by the code requirements and safety of the patrons. As a matter of fact, the plan reviewer Leland Rosato, was involved in measuring the facility when he worked for a private practice so even brought that experience and knowledge of the facility to the table.

Some brainstorming discussions at that meeting included (each item would need further study/discussions if considered):

- If the lift was only used for tours, and tours were of fairly short duration, then the risk would be minimized and some of the added safety features and accessible restroom items could potentially be negotiated.
- Can we somehow sprinkle the building? That would at least eliminate the need for a rated area of rescue assistance. When we engaged our suppression design and installation professional they estimated suppression costs between \$40,000 to \$55,000.
- Is there any way to build a small addition on the exterior of the building to house an elevator, landings, accessible entry vestibule, rated stair, restroom, and maybe act as an area of rescue assistance? Space and location would be the limitation. Because it seems the Opera House is land-locked and without room to expand its footprint we will reference in a project we built in prior years. It included an exterior stairwell with metal stairs and an elevator shaft with elevator; the total cost was \$700,000.

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