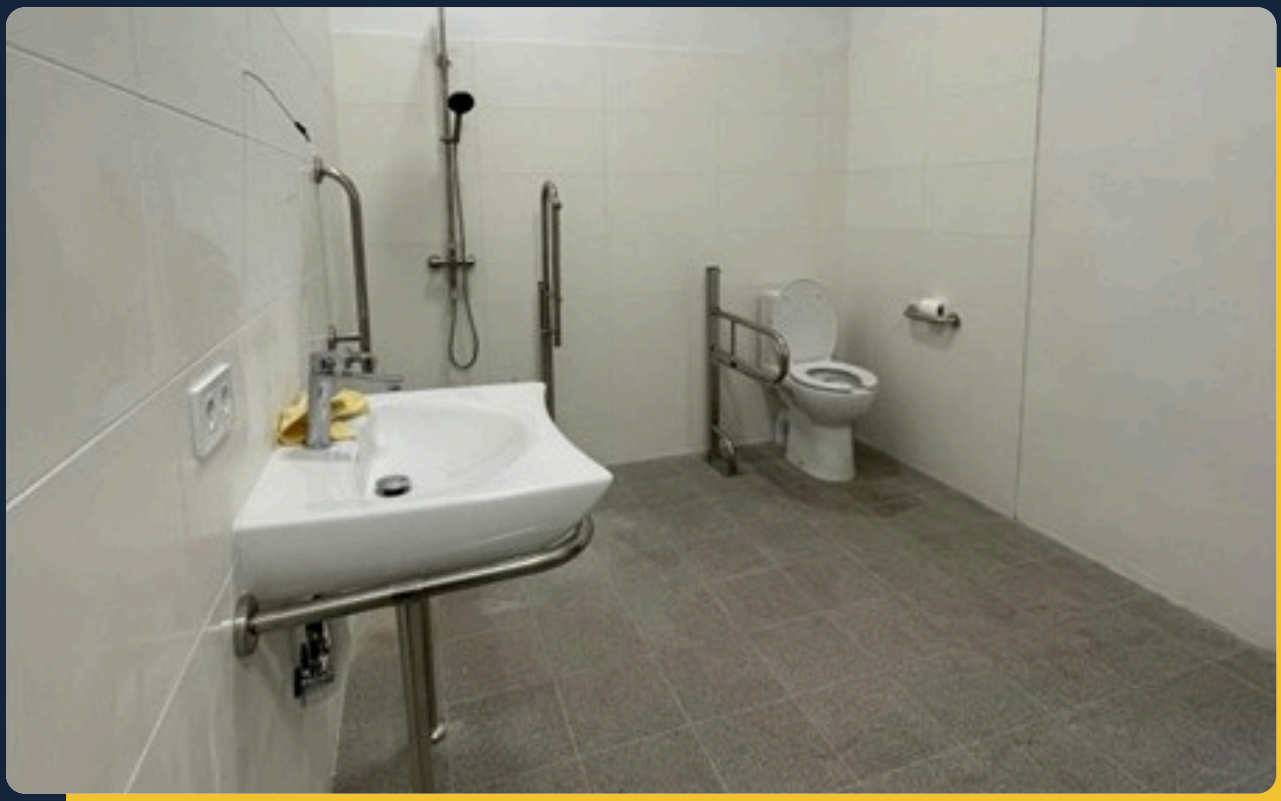
ZAKLAD VILLAGE · LVIV REGION · UKRAINE · 2026

From Barriers to Accessibility

An accessible bathroom and shower for Phoenix Shelter residents

Xylem × Solidarity Engineering × Phoenix Shelter



$6,203
total project cost, including 7% taxes

13 cm
floor level difference corrected

2026
completed in a historic building

COMPLETED PROJECT

WHY IT MATTERS

Why accessibility matters

Accessibility is not only about wheelchair users. It is about creating spaces that can be safely and comfortably used by people of different ages, physical abilities, and health conditions.



An accessible bathroom is often one of the first places where a person regains independence.

Being able to shower, use the toilet, and maintain personal hygiene **without constant assistance restores dignity, confidence, privacy, and a sense of normal life.**

- **Dignity**
- **Confidence**
- **Privacy**
- **A sense of normal life**

An investment in the future

For Phoenix Shelter, accessibility is an investment in the future. It helps us better support:

- **Displaced civilians** living at the shelter today
- **People recovering from injuries**
- **Individuals with reduced mobility**

BEFORE CONSTRUCTION

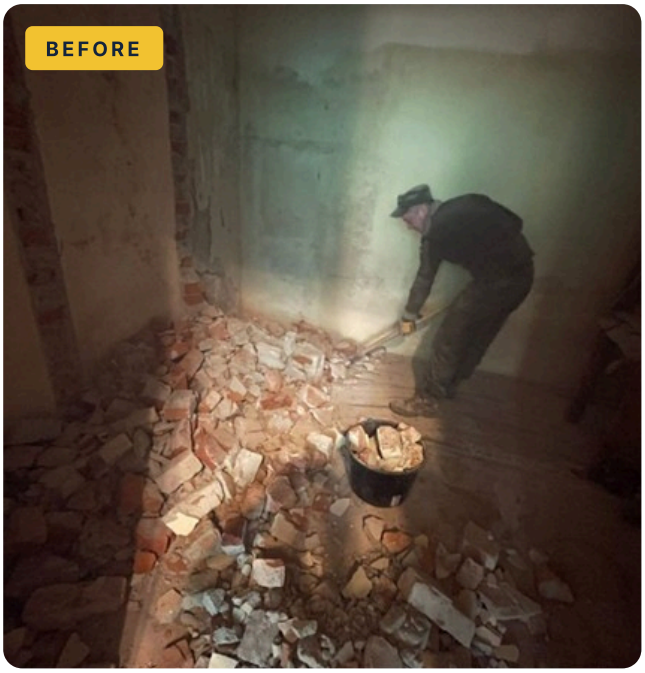
The challenges we faced

The building is a historic structure that was never designed according to modern accessibility standards.

Before construction began, there was:

- no accessible bathroom
- limited maneuvering space
- narrow access routes
- outdated plumbing infrastructure

An additional challenge was the **absence of reliable utility plans.**



The first step was to dismantle two partitions, along with walls and doors that we did not use in the project.

At times, the project felt as much like archaeology as construction.

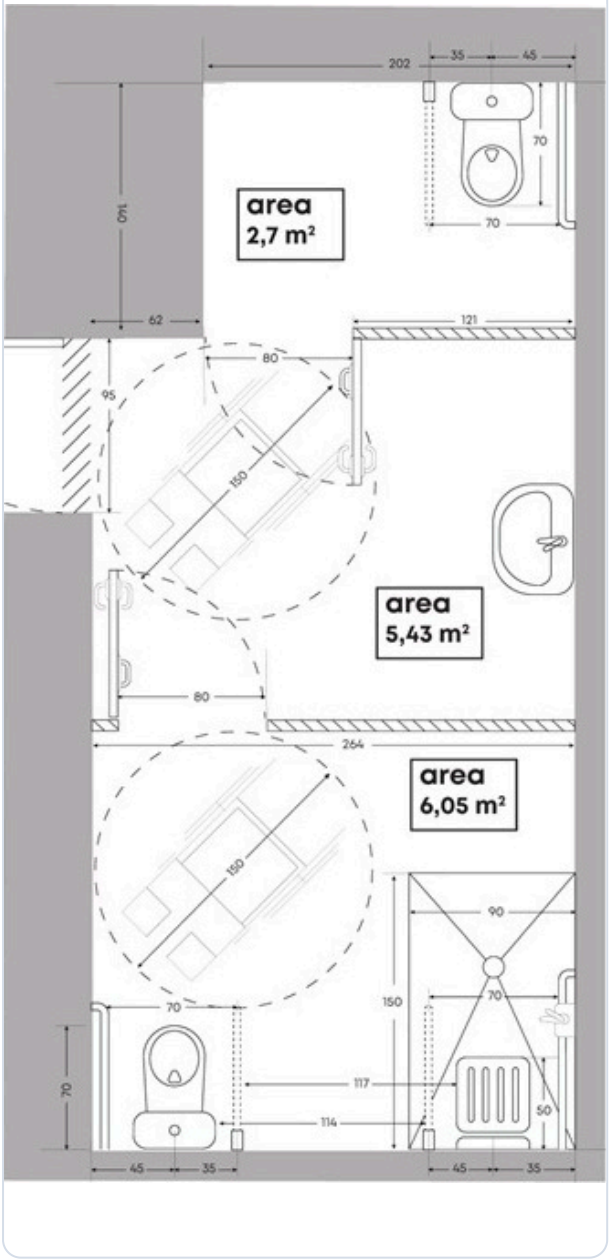
The documentation available to us did not always match reality. Pipes were sometimes located in different places than expected, and some existing systems differed significantly from the original drawings.

As part of the renovation, all wastewater pipes within the project area were replaced with modern PVC systems and integrated into the building's main drainage network using specialized connectors.



THE DESIGN

From the original plan to the final design



Floor plan of the new space: three areas of 2.7 m², 5.43 m² and 6.05 m².

THE ORIGINAL PLAN

As with many renovation projects in historic buildings, the initial design evolved as construction progressed and previously unknown technical limitations were discovered.

Our goal was to create a space that was both **fully accessible and practical** within the limitations of the existing building.

DESIGNING THE SOLUTION

The final design included:

- a dedicated accessible toilet
- an accessible shower area
- wheelchair-friendly circulation space
- minimized thresholds and level changes
- improved accessibility for people with mobility limitations and injury recovery needs
- durable materials suitable for long-term daily use and easy maintenance

Every design decision balanced accessibility standards with the realities of adapting a historic building.

DURING CONSTRUCTION

Challenges during construction

Several significant challenges emerged during construction.





1 Toilet relocation

The original design included a second toilet position. However, during construction it became clear that the elevation of the existing sewer connection was too high to allow a proper gravity drainage slope to the planned location. Although the space itself would have provided a sufficient wheelchair turning radius, the plumbing constraints made installation technically impossible.

2 Floor levels

After removing multiple layers of flooring, we discovered a level difference of **more than 13 cm** between the entrance and the interior floor. Such a height difference is unacceptable in an accessible bathroom. Correcting the issue required multiple construction stages and significant additional time.

The cool conditions inside the historic palace also slowed drying times for leveling compounds, waterproofing layers, and other materials. Some materials that were expected to cure overnight required nearly a full week, even with additional drying equipment.

3 Entrance and door system

According to accessibility standards, the entrance width already met the required **90 cm**. However, real-world testing with a wheelchair revealed a different challenge. Because the entrance was located within a recessed niche approximately 70 cm deep, wheelchair users did not have enough room to position their hands properly on the wheels while entering. Their hands repeatedly contacted the surrounding walls.

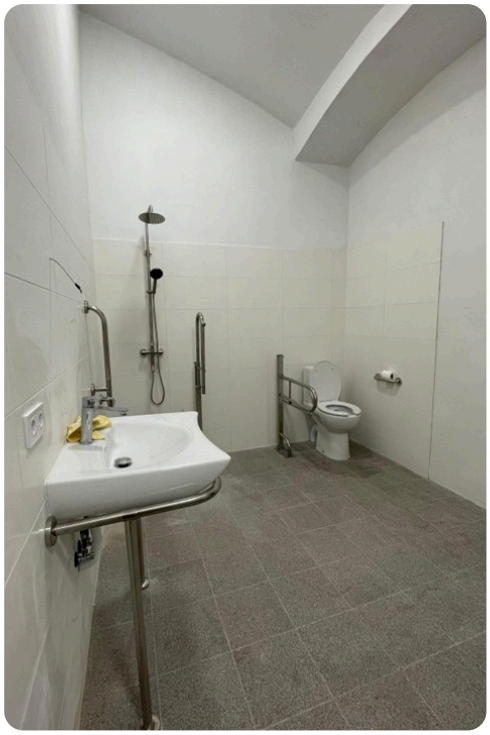
As a result, we widened and adapted the entrance area. For the door itself, we ultimately returned to our original concept and installed a sliding door system. Finding suitable moisture-resistant materials proved more difficult than expected, resulting in additional procurement delays.

Together, these three challenges extended the project timeline by approximately three weeks.

THE RESULT

A fully accessible bathroom

The completed bathroom provides **a fully accessible and functional space** that meets modern accessibility requirements while respecting the limitations of the historic building.

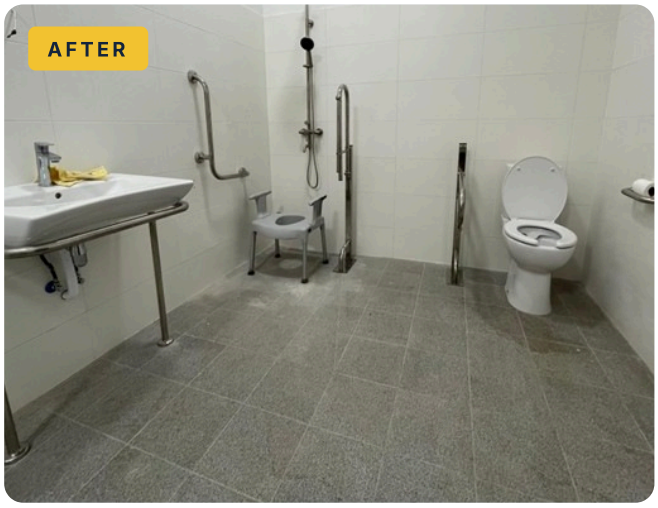


The space is:

- Accessible
- Safe
- Easy to clean and maintain
- Durable for long-term use
- Comfortable for residents with different mobility needs

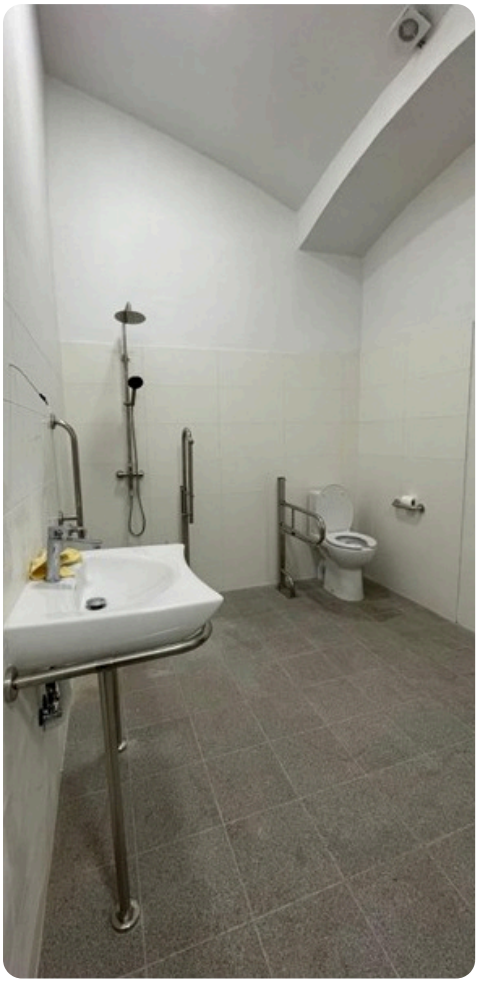
Most importantly, **it gives users greater independence** and dignity in their daily lives.





THE RESULT

The finished space



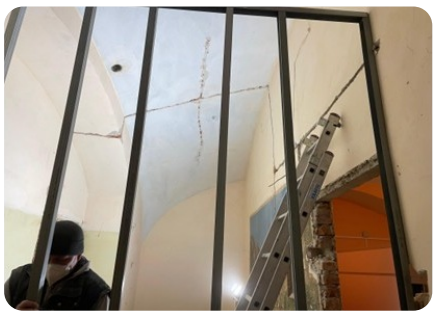






Behind the scenes

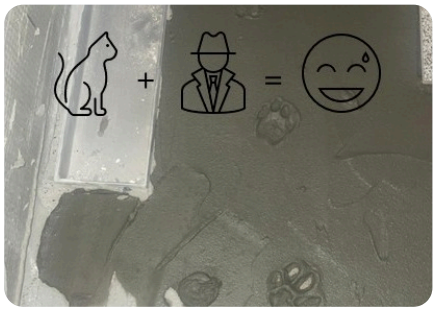












PROJECT BUDGET

Project budget

TOTAL PROJECT COST

$6,203

including 7% taxes

Creating a fully accessible bathroom and shower facility for Phoenix Shelter residents.

Construction materials

$2,499

- Flooring materials
- Waterproofing systems
- Wall finishing materials
- Drywall and structural materials
- Adhesives, sealants, and installation supplies
- Plumbing pipes, fittings, and drainage components
- Door and entrance modifications

Accessible equipment and sanitary fixtures

$1,964

- Accessible toilet fixtures
- Accessible shower equipment
- Grab bars and accessibility accessories
- Sliding door system
- Mobility-friendly sanitary equipment
- Additional accessibility adaptations
- Door

Labor

$1,334

- Demolition and site preparation
- Plumbing installation
- Construction and finishing works
- Floor leveling and accessibility modifications
- Equipment installation
- Final adjustments and testing

Subtotal **$5,797** 7% taxes **$406** Total **$6,203**

IMPORTANT NOTE

$297

A portion of the remaining project funds will be used to cover the labor costs of a tile specialist and plumber required to restore the men's bathroom. During the construction of the accessible bathroom and shower, the existing men's restroom had to be fully dismantled to allow for the necessary structural and plumbing modifications. Restoring this facility is the final step in completing the overall renovation and ensuring that all residents continue to have access to adequate sanitary facilities.

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