

CASE STUDY - Iglu

Solving Space and Safety Challenges in Modular Construction for Student Housing Bathrooms

BACKGROUND

Modular construction, known for its efficiency and speed, has gained popularity in the development of student housing. When applying this methodology to the design of bathrooms, a key challenge arises: limited available space.

An inward-opening shower door in tight bathroom spaces maximises design options outside of the shower enclosure but also poses significant safety concerns, especially in emergencies. The inward action of the door can create a hazardous situation, particularly if someone falls inside the shower, blocking the exit.

the PROBLEM

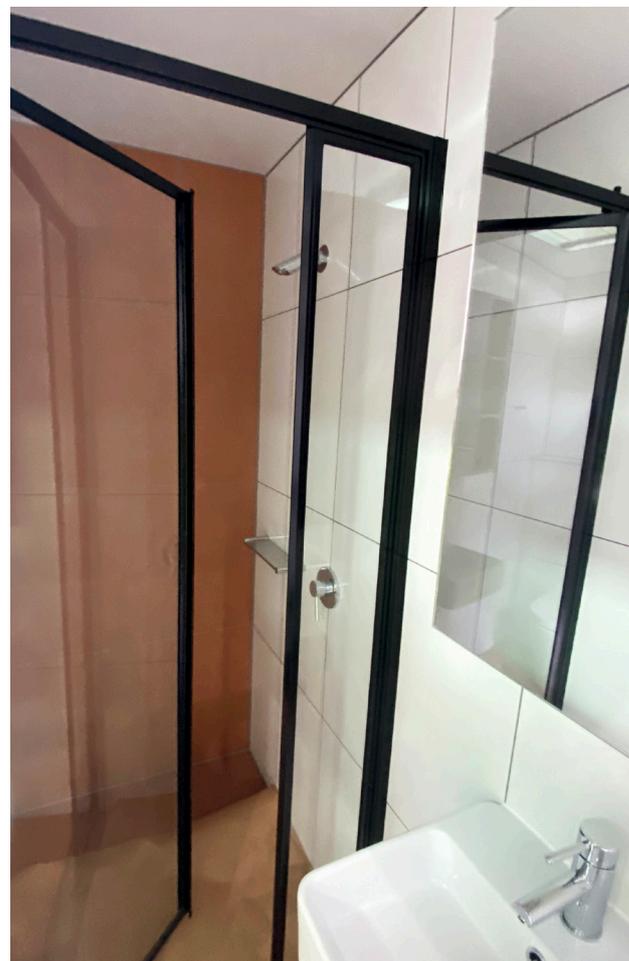
In student housing, bathrooms are often compact, leaving minimal room for function and safety features. The space constraints lead to the design of inward-opening shower doors that maximise the small space. This configuration creates a safety risk: if a person falls and is blocking the door path, it could prevent emergency access or hinder the ability to safely remove the individual from the enclosed shower.

This situation could result in serious delays during emergencies, creating a potential for harm, especially in the event of falls, slips, or medical emergencies where time is crucial.

the SOLUTION

Pivotech, a specialist in shower and wardrobe solutions, was tasked with designing an innovative solution to solve this problem and ensure both safety and practicality in confined modular bathroom spaces.

Pivotech's design solution involves an inward action system for shower doors, common in tight modular bathroom layouts. To address the safety risk associated with inward-opening doors, Pivotech introduced a safety release mechanism. This mechanism enables the door to be easily removed in the event it becomes obstructed, such as when someone falls inside the shower and blocks the door's normal operation.



Key Features of Pivotech's Safety Release System:

01

Inward-Opening Door Design

Maintains spatial efficiency in compact modular bathrooms.

02

Safety Release Mechanism

Allows for quick removal of the door if someone falls and blocks the path. This system ensures emergency responders or others can access the individual and provide help without delay.

03

Sill-less Door

Incorporates a custom drip tray drain built around the shower screen, essential for the pod and its compact space.

04

Durable Construction

Offers durability while maintaining ease of use under emergency conditions.

05

Simple Mechanism

The release mechanism is intuitive and easy to operate, requiring minimal effort to remove the door when necessary.

IMPACT & BENEFITS

- Improved Safety:** The safety release mechanism dramatically enhances the safety of students using the modular housing bathrooms, especially in emergency situations. Users can be safely reached and assisted without the need to wait for complex or time-consuming interventions.
- Space Efficiency:** The inward-opening door design maximises the use of limited bathroom space, preserving the modular design's core advantage of space optimisation. The sill-less door integrated over the floor grate provides a robust waterproofing solution.
- Cost-Effectiveness:** This solution allows the project to stay within budget while addressing critical safety concerns. The safety feature does not significantly increase the cost compared to traditional solutions.
- Regulatory Compliance:** The design adheres to safety standards and regulations, ensuring the student housing units meet building codes and health and safety guidelines.
- User Confidence:** Students and other residents are reassured knowing their living spaces are designed with practical safety features that anticipate emergencies.

CHALLENGES & CONSIDERATIONS

- Implementation in Existing Buildings:** Retrofitting the safety release mechanism in already built modular units could pose logistical challenges, requiring updates to the original designs or slight modifications to existing bathroom layouts.
- Durability of Release Mechanism:** Ensuring the safety release mechanism remains effective over time, especially under regular use and wear, is essential. Ongoing maintenance or periodic testing may be needed to maintain the system's reliability.

CONCLUSION

Pivotech's innovative safety solution for the inward-opening shower door in modular student housing represents a creative approach to balancing the need for space efficiency with the critical requirement for safety. By incorporating a safety release mechanism, the design addresses the potential hazard of blocked exits during emergencies, providing an elegant and practical solution to a challenging problem.

This case study showcases the importance of thoughtful design in modular construction and highlights how emerging safety technologies can be integrated into space-constrained environments to improve overall liveability and security.

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