Accessible bathrooms in dwellings

The What, Why and How

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My studio project focuses on a housing block with apartments that are smaller than the prevailing standard in swedish developments. When drawing smaller dwellings it is challenging to fit in accessible bathrooms in a satisfactory way. In a 30 square meter apartment the area of an accessible bathroom takes up 16 % of the dwelling.

Therefore I wanted to take a look at the size of the bathroom.

The existing measurement--requirements in swedish BBR are based upon investigations made in the 70's. With the progress made in the development of disability aids since the 70's in mind;

- Are the existing BBR size requirements
  still relevant?

- Can the size be reduced without
  compromising the accessibility?

- If no - can we design alternative solutions
  for a more flexible home environment?

If the measurements prove to still be required- can we design alternative solutions for a more flexible space in a home environment?

Unfortunately I found it difficult to find both the exact required measurements and any information on new aids that could possibly minimize the needed area in a bathroom, but here is what I have been looking at…

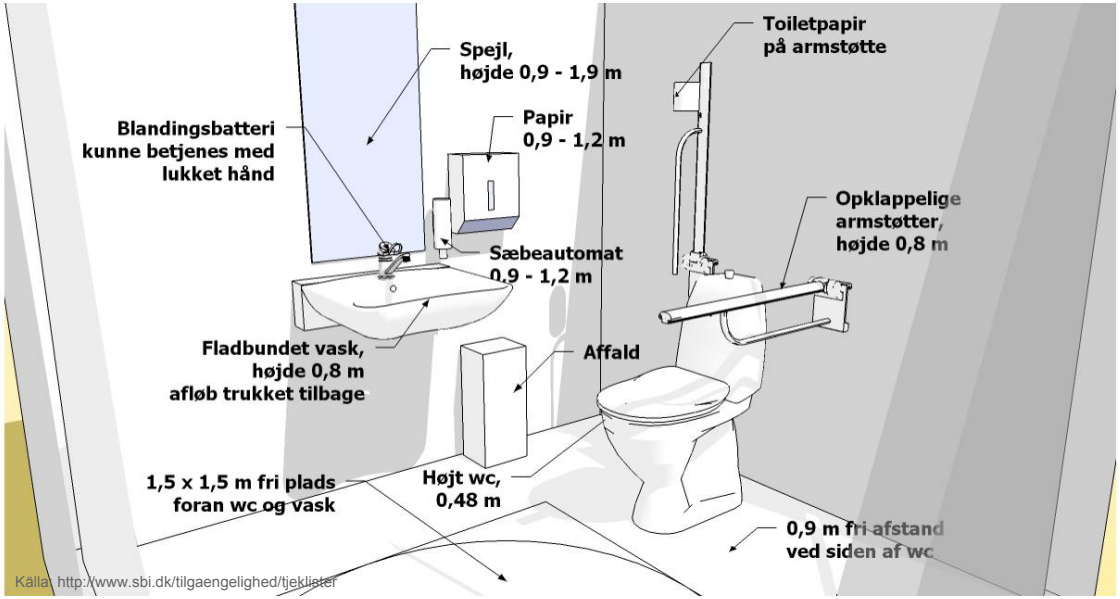
The only recommended measurement in the swedish BBR (Boverkets Byggregler) for an accessible toilet in a **public building** is a **minimum dimension of 2.2 x 2.2 m**. BBR also states that fittings and equipment should be ‘properly designed and installed’, and that the room ‘should have contrast markings and a security alarm’.

For sanitary rooms in dwellings BBR simply states that they **“... should be made as accessible and usable as possible. If it is not possible to move the walls, you should at least place the toilet, sink, shower and bathtub in relation to each other as specified in Annex A in SS 91 42 21 (normal level).”**

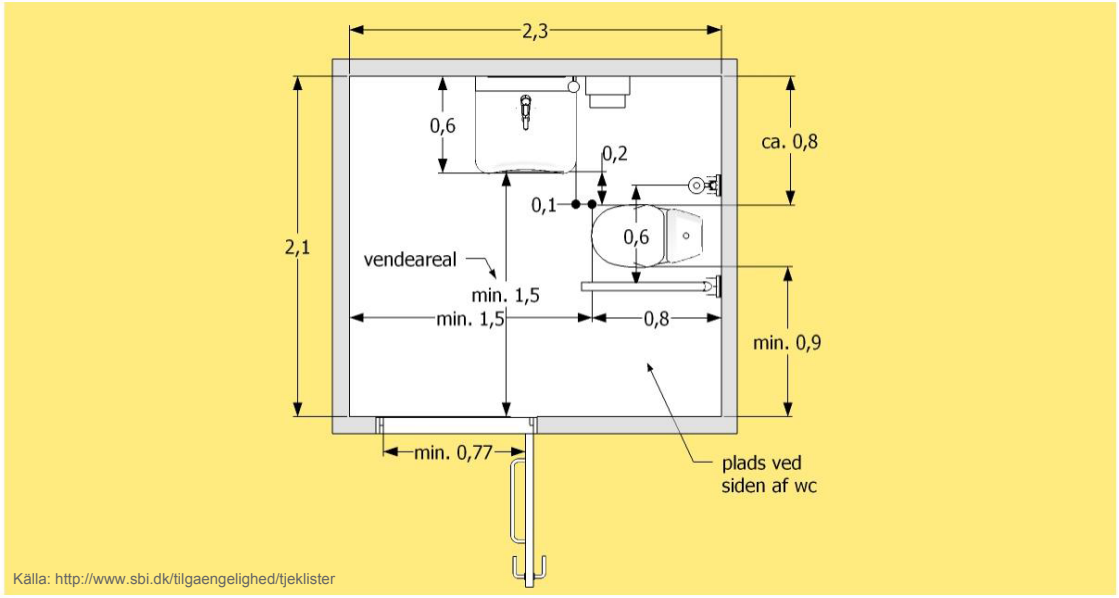
This is obviously meant for conversion of already existing non accessible bathrooms.

I had difficulties obtaining the SS--document in time for this assignment since there are no copies in libraries in the Stockholm area and it is quite expensive to buy, and therefore the measurements in this report are taken from the danish equivalent provided by Jonas Andersson.

These are the measurements I have been working with.



Källa: http://www.sbi.dk/tilgaengelighed/tjeklister



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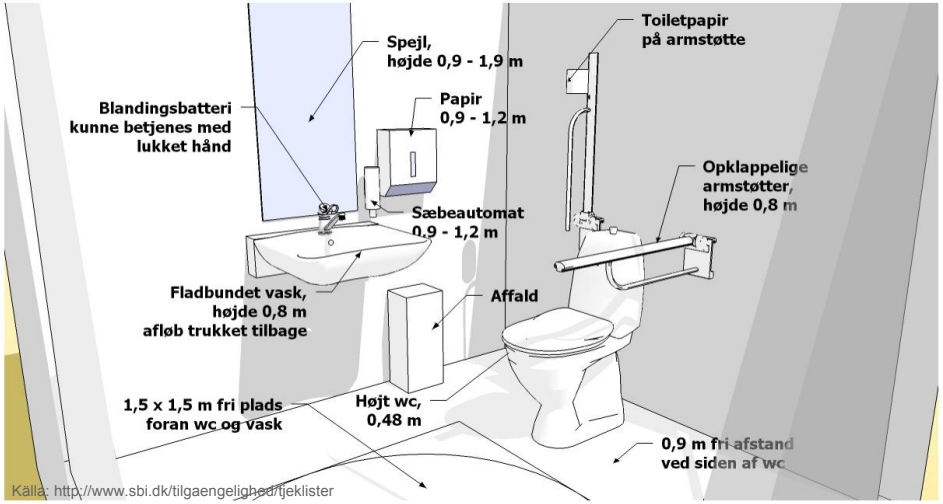
In a report by Hjälpmedelsinstitiutet called ‘Funktionsnedsättning och toalettbesök’ published in 2012, 38 persons with different disabilities were interviewed on the main issues for them in the design of functional bathrooms. The report found the most important points to be:

- Room to turn wheelchair 1,5 x1,5 m
- Height of toilet and placement of supports
- Reachable light switch, toilet paper, faucet, soap and paper towels, and a mirror in the right height
- Space for assistant to both sides of the toilet



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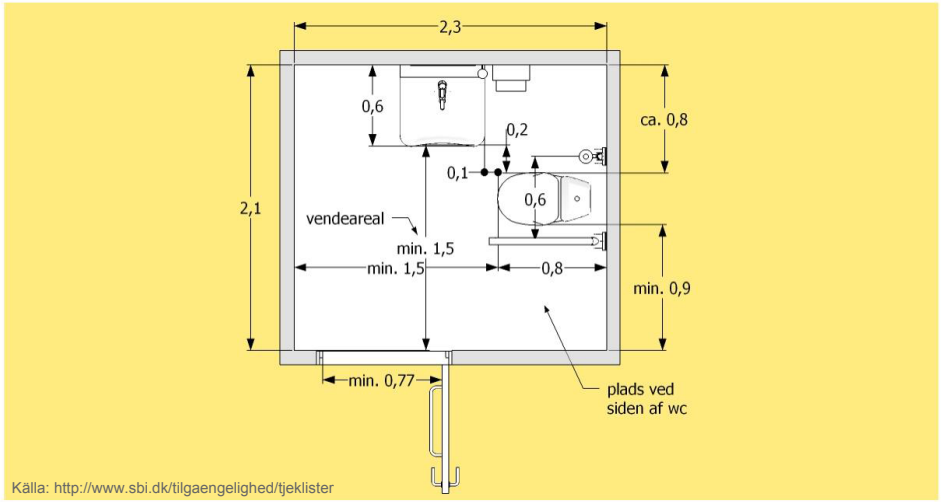

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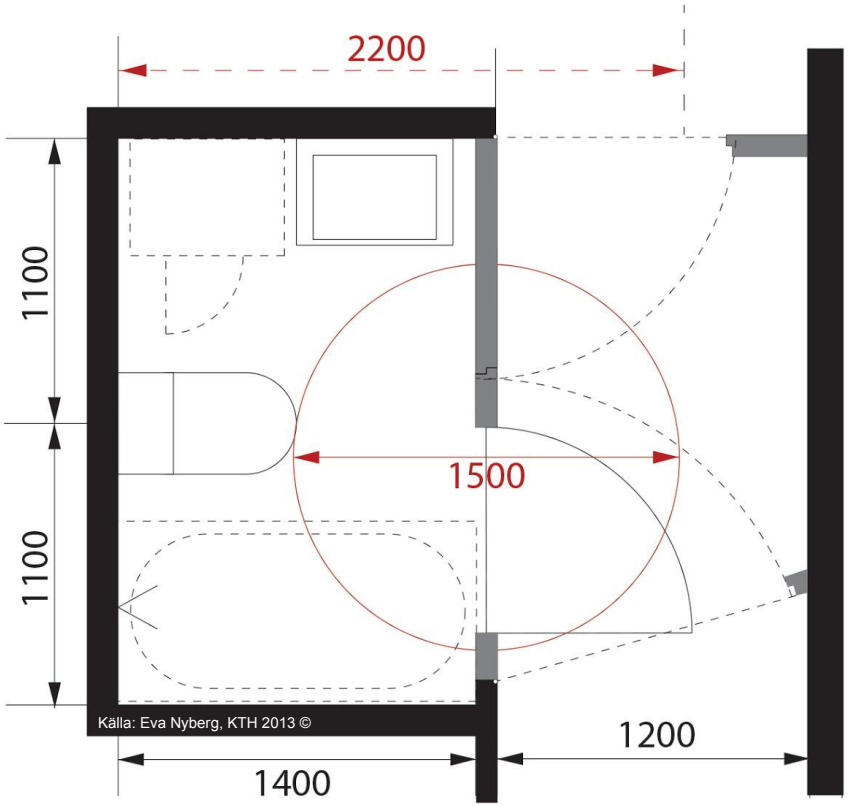
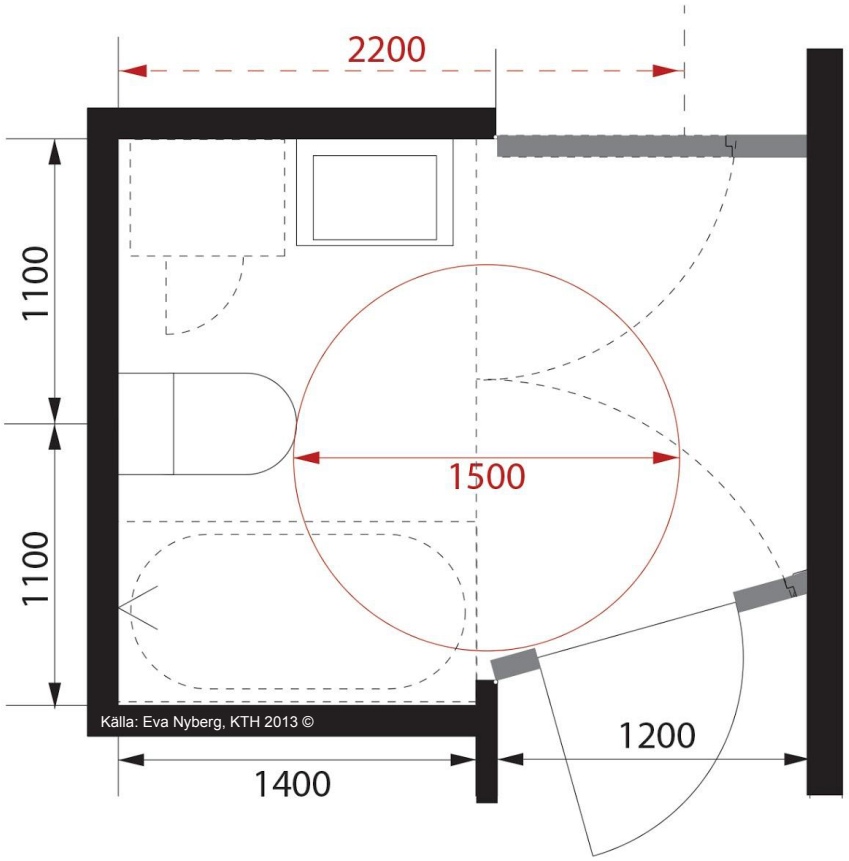
I might add again that these measurements are for public bathrooms, but the only possible difference I have been able to find is the diameter of the turn circle for the wheelchair, 1,5 x 1,5 meters is the required measurement for an outdoor wheelchair, while an indoor wheelchair - used in a dwelling - only needs a diameter of 1,3 x 1,3 m. It seems that these measurements are difficult to reduce while still keeping a high usability, so I started looking into other, more flexible solutions.

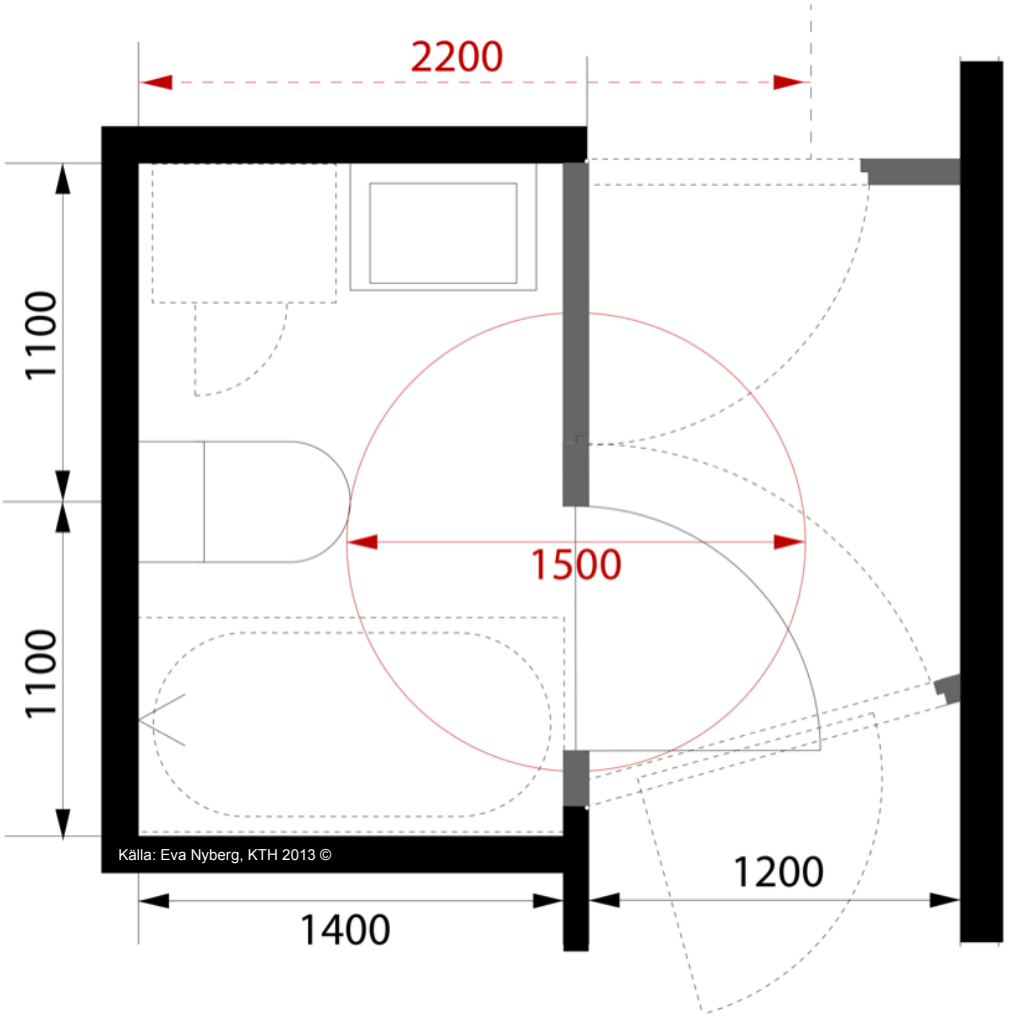
Possible alternative No 1: Flexible walls

If you have water proofing extending into the hallway and mount openable walls in a non--organic material it would look something like this:





Possible alternative No 1: Flexible walls, Pros and Cons.



'ros:

- Only 2200 x 2700 mm needed for WC and hall
- Ample space for disabled when in 'open' position

Cons:

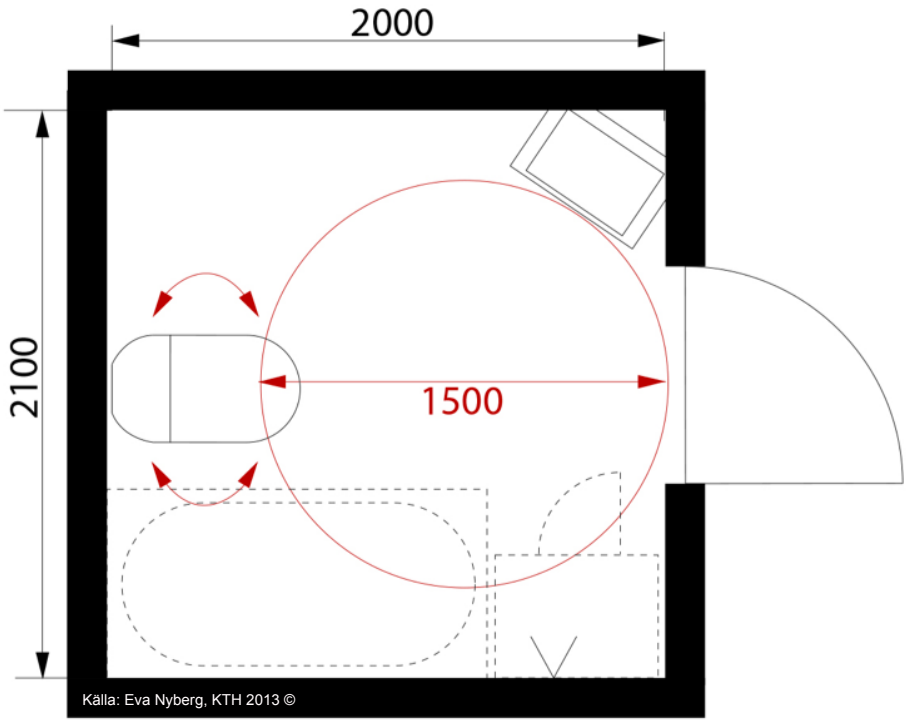
- Walls need to be moved each time extra accessibility is needed
- Difficult to produce walls that are easily openable and at the same time have acceptable sound-proofing abilities?
- No passage through hall when WC is in use
- Not enough space to turn wheelchair in hall

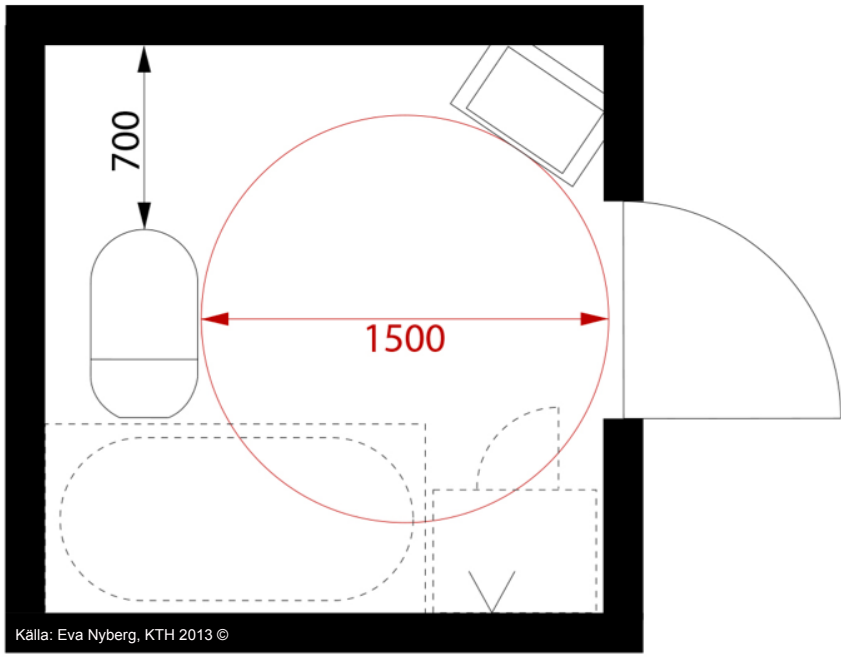
Conclusion:

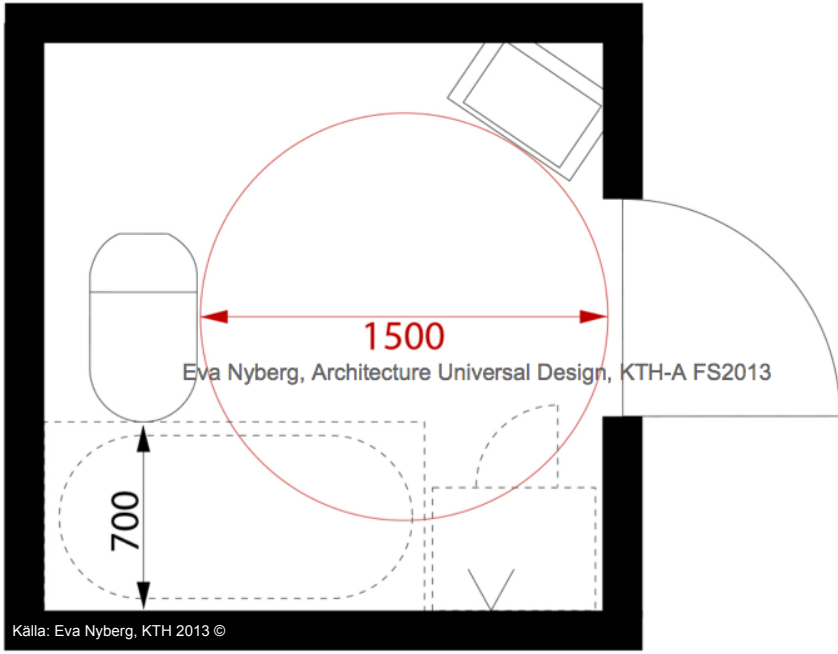
Possible solution as dwelling for non-disabled with occasional disabled visitor. Unsuitable as permanent dwelling for disabled.

Possible alternative 2: Turnable toilet

It might look something like this.







Usually a disabled person favours accessing the toilet either from the left or from the right, depending on the type of disability or simply depending on if they are right- or left handed. In this scenario the toilet can be turned both ways.

Possible alternative 2: Turnable toilet, Pros and Cons

Pros:

- No needed intrusions in neighbouring rooms
- 10 cm x 20 cm saved

Cons:

- Not very large reduction of area

Conclusion:

If a turnable toilet is produced this may be a possible solution for permanent living for both disabled and fully functional persons.