

Brett

Accessibility Problems

- Bath
- Kitchen
- Entrance
- Bedroom
- Living Area
- Whole House
- Garage

Personal Profile

- Brett: Age 16, 2008
- Cerebral Palsy
- Diagnosed in 1993 at age 1
- Accessibility Improvements Made in 1993 and 2004



Accessibility Solutions

Brett was diagnosed with Cerebral Palsy in 1993 when he was a year old. He got his first wheelchair when he was four years old and now uses an electric wheelchair for mobility. Although Brett lacks fine motor skills in both hands, he can use his left hand to reach hangers in his closet and to plug cords into outlets. His right hand is less mobile, but he often uses it as a support for his left hand. His family lives in a house (Fig. 1) that was part of the farm they bought just before he was born. Brett's parents soon added a garage (red arrow, Fig. 1) on one end of the house in anticipation of his changing needs. In 2004 they built an addition (orange arrow, Fig. 1) on the other end of the house that provided an accessible bedroom and bathroom for Brett.



Figure 1

Garage: Brett's parents added the garage (Fig. 2) shortly after they moved in. They were not sure what home modifications might be needed later, so they built a garage large enough for three cars, but only installed two garage doors. They originally thought the extra space could be used to accommodate Brett's future needs and still provide enough space for two cars. When the garage was added, Brett was not using a wheelchair. But when he eventually needed a wheelchair to get around, they purchased an accessible van (Fig. 3) with a retractable ramp that provides easy access to and from the vehicle. The extra space in the garage (red arrows, Figs. 2 & 3) allows room for both the vehicle ramp (Fig. 4) and the ramp they constructed to go from the garage to the main floor of the house (Fig. 5). They especially appreciate the large garage during bad weather so Brett's wheelchair stays dry and doesn't track water or mud into the house.



Figure 2



Figure 3



Figure 4

Entrances: The family installed two ramps for Brett to get into the house from the garage. The first ramp (Fig. 5) leads from the garage into the entrance hallway (red arrow, Fig. 5 and red circle, Fig. 6). The second ramp (Fig. 7) leads from the entry into the kitchen. The family is currently planning to make an accessible front entrance to the house (red circle, Fig. 8) by adding a large deck with a ramp that leads to the ground. Brett needs to have a second way to get out of the house in case of fire.



Figure 5



Figure 6



Figure 7



Figure 8

Bedroom: A new wing was added to the house in 2004, creating a large area for Brett's bathroom and bedroom with plenty of space for maneuvering a wheelchair. The connecting link to the new addition is a pocket door (Fig. 9) at one corner of the living room. The pocket door (red arrow, Fig. 9) is extra wide, making it easy for Brett to get his wheelchair through the door without needing to move forward and back to reach and open the door. A coat rack (red circle, Fig. 10) has been placed immediately inside the door at a convenient height for Brett to reach the hooks from his wheelchair.

The large closet without doors makes all of the clothes easy to see (Figs. 11 & 12). His mother rotates seasonal clothes between the high and low rods (blue arrows, Fig. 11). Brett is able to reach the lower rod and shelves on his own. Shirts and jeans are folded and placed on the shelves. Socks and underwear are stored in baskets (blue arrows, Fig. 12).



Figure 9



Figure 10



Figure 11



Figure 12

Another consideration in designing Brett's bedroom was to install lower windows (Fig. 13) so he can see out while seated in his wheelchair. Fortunately, the other windows in the house were already lower (Fig. 14) so the design of the bedroom windows matches the height of those in the rest of the house (red bidirectional arrow, Figs. 13 & 14). The electrical outlets were also raised up to a 24 inch height (Fig. 15) to allow Brett to reach them from his wheelchair.

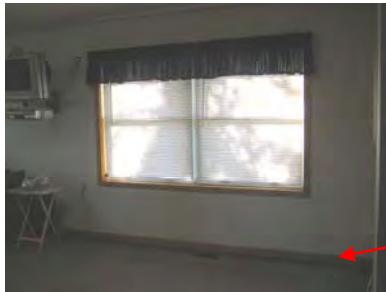


Figure 13



Figure 14

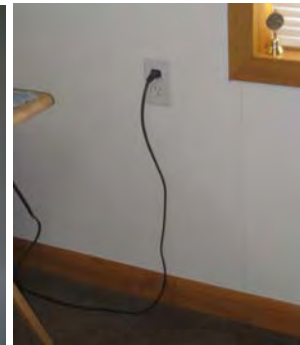


Figure 15

The television was mounted high on the wall (red circle, Fig. 16) to provide more floor space for Brett to move around. The height of the beds (Figs. 16 & 17) is adjustable so that Brett can lie down to watch television. There are two beds in the room because the spare bedroom is currently a craft room. Brett enjoys having both beds in the room, but if he wanted a computer desk in his room, it would replace one of the beds.



Figure 16

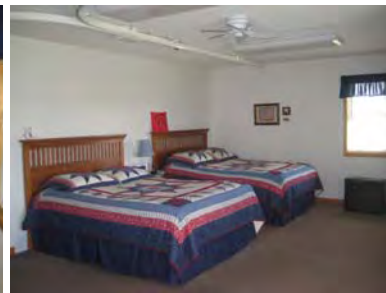


Figure 17

Bathroom: The new bathroom is part of the addition that was built in 2004. The existing bathroom was much too small to accommodate a wheelchair (Figs. 18 & 19). Brett’s family decided it would be easier to build a new bathroom for him, rather than modifying the old one. The existing bathroom is used by his parents. The new bathroom is very spacious (Figs 20 & 21) and enables Brett to get around easily in his electric wheelchair.

Old Bathroom:

New Bathroom:



Figure 18

Figure 19

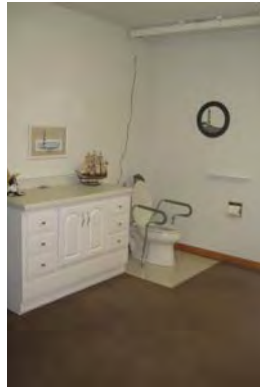


Figure 20



Figure 21

The new vanity provides plenty of knee space so Brett can wheel directly under it (Fig. 22). The mirror extends all the way down to the counter (red arrow, Fig. 22) and lets Brett see himself in the mirror while seated in his wheelchair. An outlet was installed on the front of the vanity (red circle, Fig. 22) making it easier to reach—instead of stretching and leaning toward an outlet on the back wall. Since Brett can only use his left hand, the outlet was placed on the left side of the sink. The accessible sink (Fig. 23) slants up toward the front of the counter (orange arrow, Fig. 23), providing extra space so Brett won’t hit his knees on it when he wheels under the vanity. The shallow sink makes it possible to place the counter at a convenient height to reach the faucet from a wheelchair, yet avoid bumping his knees on the bottom of the sink. Because it is difficult for Brett to grasp and turn knobs, they installed an electronic faucet (red circle, Fig. 23 and Fig. 24) that turns on automatically when he gets his hands close to the sensor. The faucet is set to turn on at a comfortable temperature so Brett doesn’t need to adjust the controls. However, the temperature can be adjusted if needed by turning the knob (red circle, Fig. 24) left or right.



Figure 22



Figure 23



Figure 24

A second door (red arrow, Fig. 25) in the bathroom leads to his parent’s bedroom. Although they do not share his bathroom with him, they use the new door to obtain quick access when Brett needs them in the night. The counter (Fig. 25) provides extra storage and a place to set supplies. Carpeting has been installed on the floor, except around the toilet (Fig. 26), where laminate was used. There are grab bars on the wall (red circle, Fig. 26) and around the toilet (red arrows, Fig. 26). The lift system that comes into the bathroom from the bedroom stops above the toilet (red circle, Fig. 27), enabling Brett to get to the toilet easily.



Figure 25

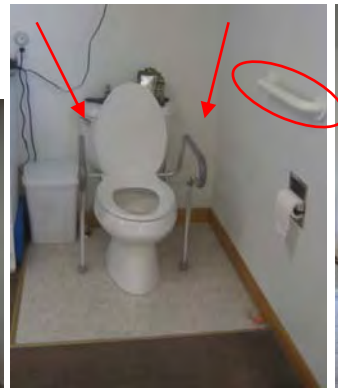


Figure 26



Figure 27

The curbless shower (Figs. 28 & 29) is a large five-by-five foot unit. Most roll-in showers are three-by-five foot, but Brett’s mother found this larger unit by searching on the Internet. Brett uses a waterproof shower chair to roll into the shower (red arrow, Fig. 28 and Fig. 29). A fold-down seat (red circle, Fig. 30) came as part of the shower unit, but he prefers to use the waterproof chair. The adjustable shower heads (red circles, Fig. 31) make it easy for a caregiver to help him bathe. When Brett is done with his shower, his mother wheels him in his waterproof shower chair to the toilet, and then transfers him into the lift from there (Fig. 32).



Figure 28

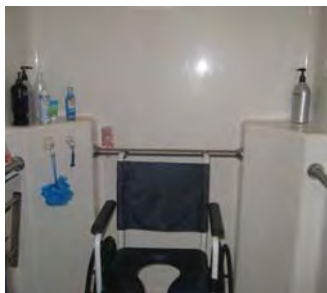


Figure 29



Figure 30

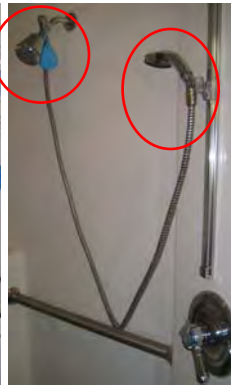


Figure 31



Figure 32

Lift System: Since Brett is 16 years old now, his parents can no longer carry him. A lift system was installed to help Brett’s parents get him from the bedroom to the bathroom and back (Fig. 33). The lift system goes over both beds (orange arrows, Fig. 34) and turns two different ways: one way to the bathroom (red arrows, Figs. 35 & 36) and the other way to a future connection to the living room (blue arrows, Figs. 35 & 37). In the bathroom, the lift system stops over the toilet (Fig. 38). Since the lift track is installed on the ceiling, the doorway between the bedroom

and bathroom was eliminated during the planning process. When they add the track link to the living room, (see hole that has been cut, red circle, Fig. 39) they will need to cut through the top of the doorway to provide access space for the lift.



Figure 33



Figure 34



Figure 35



Figure 36



Figure 37



Figure 38

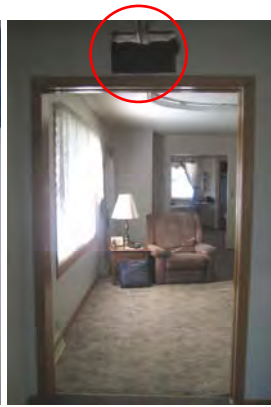


Figure 39

Living Room: The only modification they are planning for the living room is to extend the lift system, so Brett can sit on the sofa and enjoy watching television. The ceiling track has already been installed, but they still need to reinforce and cut away part of the bedroom doorway (red circle, Fig. 39). The lift system comes out of the bedroom (red arrow, Fig. 40) and stops just above the sofa (blue arrow, Fig. 40). The family was fortunate to already have wide doors throughout the house (red bidirectional arrow, Fig. 41) so Brett can get around in his wheelchair.

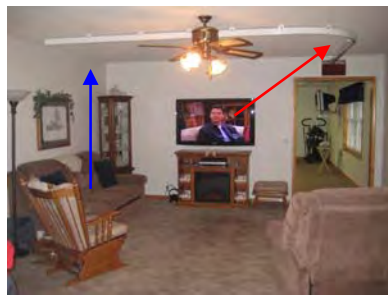


Figure 40



Figure 41

Financing the Project

- Personal Funds
- Loans
- Grants
- Other

Brett's family used personal funds to build the garage and the ramps into the house. When they wanted to get an accessible van and to add a new bedroom and bathroom, they applied for financial assistance. Partial funding (\$6,000) for the van was received from the Ill and Handicapped Waiver program. The Iowa Division of Vocational Rehabilitation Services (DVRS) provided \$3,500 to help pay for the roll-in shower. When Brett's family installed the lift, DVRS provided \$3,000 to help pay for it, and they also received assistance from the Ill and Handicapped Waiver program (\$6,000). The remaining cost was paid with personal funds.

Lessons Learned/Advice for Others

When talking with Brett's mother, Julie, she said the biggest lesson they learned was, "If you want something, search and you will hopefully find it. People told us we would never find a five-by-five foot shower or a pocket door for the bedroom that was as wide as it is. Don't listen to people 100 percent. If you *really* want something, look for it and [do] research. We searched for exactly what we wanted, and we found them."

As far as what they would do differently, she said "We would add more outlets so you can do more rearranging [of furniture]. Also, we would include more space around the toilet, especially with the lift there now. Things have changed since we built the addition, and he doesn't bear weight anymore."

What Difference Did It Make?

When asked if the modifications had been worth it, Julie said, "Yes, tons! There is no carrying Brett anymore. Since we added the lift, it is easier on our backs and he can be more independent. It has been fabulous – very wonderful to have the extra space."

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