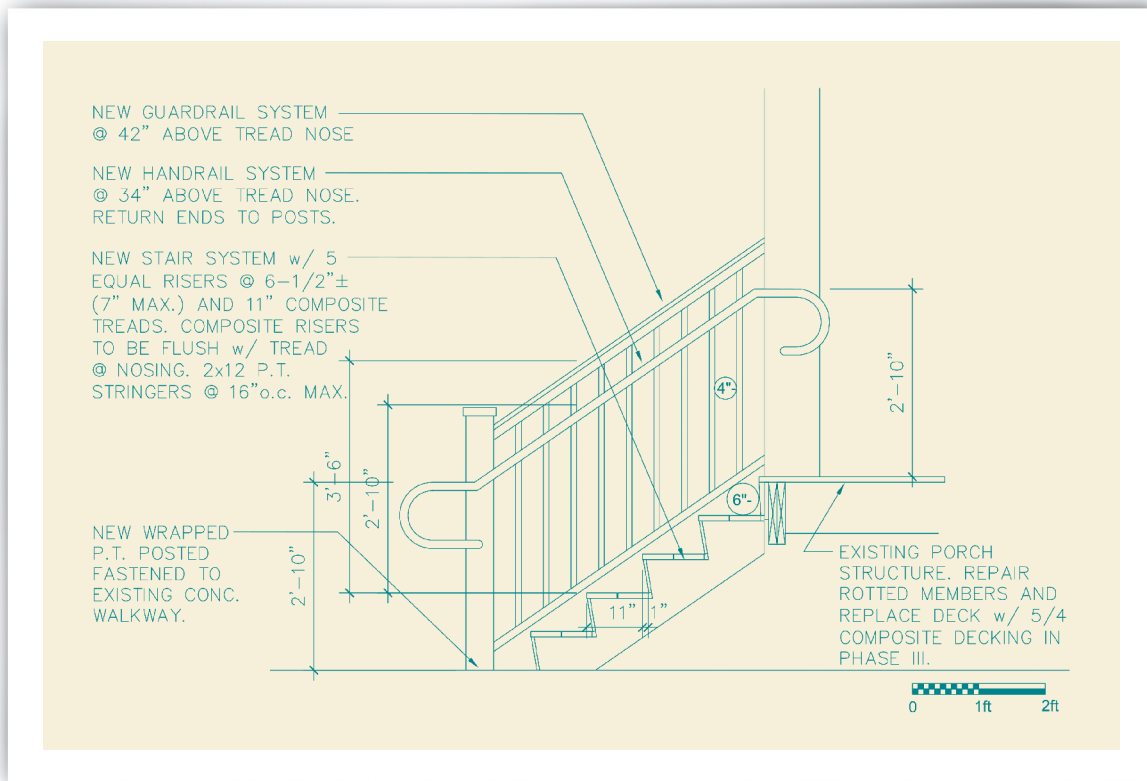

PROJECT RECOVERY



**AFTER THE BOSTON MARATHON BOMBINGS,
DESIGN VOLUNTEERS UNITE**



ABOVE

Porch step section, courtesy of Architecture for Humanity Boston (AfHB)

OPPOSITE

A Somerville, Massachusetts, triple-decker was renovated for a third-floor resident injured in the Boston Marathon bombings. Photo: Michael McHugh

by Michael McHugh AIA

A looming deadline kept me from my usual spot a few blocks from the Boston Marathon finish line on April 15, 2013. When I heard the news that a bomb had exploded, my thoughts turned to friends whom I knew would be in the area. The random nature of the bombing spared those friends, but it shattered the lives of people I was soon to meet.

Boston galvanized quickly. Emergency responders and bystanders fashioned tourniquets from anything handy. Medical tents became triage hospitals. The city and state established the One Fund to collect donations. And then quietly, behind the scenes, the state Department of Public Safety created the Boston Survivors Accessibility Alliance to provide home renovations to those who would be needing big changes to their physical environments.

The design community also rallied, with many ideas and offerings of support. At the Boston Society of Architects, this energy coalesced into a committee, Renovate for Recovery, which brought together architects, designers, and accessibility consultants to provide volunteer design services to make homes accessible for those who lost limbs and suffered other traumas.

My team was matched with a survivor who had lost a leg and lived on the third floor of a Somerville triple-decker, where she wanted to remain. She was faced with front porch steps that were worn, uneven, and without handrails. Getting up the narrow and twisting stairs to her apartment was another obstacle. Because the climb was so challenging, we recognized a need for a place where she could access fresh air and

sunshine without the struggle of all those stairs. There was an existing roof deck, but the railings were flimsy and it could barely support one individual under the best of circumstances. The apartment itself had limited maneuvering space and a tiny bathroom, whose door swung into the room and barely cleared the toilet as it opened.

To maximize accessibility within the existing bathroom and entry spaces, door swings were reversed and new fixtures were installed. Simple yet thoughtful changes can make all the difference in the world.

So the project was divided into three phases that volunteer construction crews could complete swiftly. The phases were: 1) the steep, uneven front exterior stairs; 2) the new roof deck; and 3) improvements to the building interior to make it more accessible.

My team set right to measuring existing conditions and producing a set of design drawings. The alliance coordinated with contractors willing to do the work, and crews from the PBS television series *Ask This Old House* picked up Phase 1. They were soon on site with construction and production workers discussing the porch stairs. These needed to be rebuilt so that she would be able to use railings and firm surfaces for support in all kinds of weather.

Filming construction in multiple takes for television slows things down quite a bit. More than a few local handymen stopped by to comment that it wouldn't take *them* so long to build a few steps! By the fall, the steps were finished and the segment aired.

Phase 2—the roof deck—took a little longer to get going with the cold weather setting in. The existing deck was just a railing around the roof of the second-floor porch. The roof had to be opened up to evaluate the existing structural conditions. There wasn't much to evaluate: It turned out that the roof structure was practically sawdust and had to be rebuilt. Volunteer structural engineers joined the team; together, we designed a new deck. The contractors worked around the tricky winter weather and a reviving building market. By spring, the deck was ready, becoming a small haven to step

outside and enjoy the sun without worrying about safety.

Phase 3 was more complicated still. Carpenters, plumbers, electricians, painters, and flooring installers needed to coordinate in a small space to rebuild the interior stair's handrails and guardrails at an accessible height that could support a newly disabled person as she learned to make her way up and down. The railings were rebuilt to match the details of the existing newel posts and balusters to preserve the character of the existing building and to avoid an institutional look.

To maximize accessibility within the existing bathroom and entry spaces, door swings were reversed and new fixtures were installed. The flip of a door swing from one side to another made the difference between the door being a barrier and being able to reach the toilet. Simple yet thoughtful changes can make all the difference in the world.

The final phase was complicated by the fact that this was yet a third construction team, with a different general contractor in charge. By the spring of 2014, the construction industry had greatly recovered; although the project leaders were still committed, coordinating volunteer subcontractors was becoming increasingly difficult. Numerous starts and stops between trades working in tight quarters slowed things down. The priorities of the volunteers were being strained by other commitments. As the project dragged on, everyone got frustrated. Even on nonvolunteer jobs, it is often difficult to get those last punch list items finished. The same held true here; the volunteer nature of these projects is both their blessing and curse.

Renovate for Recovery and the alliance represent a valiant effort by the local building and design industry to meet the needs of those injured by the bombings. The key elements to making it all happen: the leadership of the Massachusetts Department of Public Safety and the cooperation of the local building departments. The Community Design Resource Center's professional liability insurance covered ad hoc teams of design volunteers and paved the way for many designers to participate. The design and building community should continue to examine how this unusual model of volunteerism and donations might become a framework to build on, to meet the next hurricane, flood, earthquake, or disaster. ■

The Boston Survivors Accessibility Alliance program is still accepting applications. Visit www.mass.gov/dps.

ADD 10" VERTICAL EXTENSIONS TO EACH NEWEL POST.

PROVIDE NEW 1-1/2" DIAMETER WOOD HANDRAIL DOWELED AT TURNS AND BENDS ATTACHED TO NEWEL POSTS W/ ADJUSTABLE METAL BRACKETS @ 2'-10" ABOVE STAIR NOSING. SAND JOINTS SMOOTH. PAINT.

REMOVE EXISTING TOP RAIL AND REINSTALL AT NEW HEIGHT: 3'-6" a.f.f. @ LANDING AND 3'-0" ABOVE NOSING @ STAIRS

3'-6"

3rd FL. LANDING

PROVIDE NEW 1-1/4" X 1-1/4" WOOD BALUSTERS SPACED SO A 4" SPHERE WILL NOT PASS THROUGH. PAINT.

1

REMOVE EXISTING GRAB BARS. PATCH WALLS. PAINT.

2'-10"

3'-6"

3rd FL. LANDING

2'-10" above nosing (handrail)

3'-6" above nosing (top rail)

2

NEW COMPOSITE DECKING TO MATCH FRONT STEPS AND PORCH.

REMOVE EXISTING ROOF MEMBRANE, PREPARE ROOF SHEATHING AS NECESSARY TO INSTALL NEW EPDM MEMBRANE ROOF.

NEW P.T. 2x SLEEPERS @ 16" o.c. RESTING ON EPDM SEPARATOR STRIP ON TOP OF NEW EPDM MEMBRANE ROOF.

NEW P.T. 2x BAND JOIST.

NEW PVC SKIRT BOARD.

RUBBER BOOT FLASHING ADHERED TO 4x4 P.T. POST & EPDM ROOFING. EXTEND 2" ABOVE DECK.

NEW P.T. 4x4 POST.

NEW P.T. 2x BLOCKING BETWEEN EXISTING RAFTERS @ EACH NEW POST.

EXISTING PORCH ROOF CONSTRUCTION TO REMAIN. REINFORCE/REPLACE ANY DAMAGED MEMBERS FOUND DURING DEVOLITION w/ P.T. LUMBER.

ELEVATION OF NEW DECK 3/4" BELOW 3rd FLOOR

NEW P.T. 2x LEDGER SCREWED TO STRUCTURE w/ 5/16" DIA. GALV. LAG SCREWS @ 32" o.c. MAX. INTO EXIST. WOOD STUDS OR RIM BOARD. FLASH OVER w/ EPDM & EXTEND UP UNDER SHINGLES. TOENAIL SIFTERS TO LEDGER.

0 1ft 2ft

PROJECT TEAM (LISTED ALPHABETICALLY)

Allen & Major, structural engineers
 Architecture for Humanity Boston
 Community Design Resource Center (CDRC)
 Davis Square Architects
 S+H Construction
 Structure Tone

ABOVE

Stair details, courtesy of AfHBoston

LEFT

Roof section, courtesy of AfHBoston