Breathe Easy: Making Homes Healthier for Low Income Families

Homes Within Reach Conference
Hershey, PA

December 2021
Rebuilding Together Pittsburgh (RTP) rebuilds homes for low-income individuals with an emphasis on seniors, veterans, and persons with disabilities.
The lasting impact of our work is stabilizing and revitalizing the region’s neighborhoods.

We are working with community organizations and families in:

- McKees Rocks
- Hill District (PGH)
- Hilltop (PGH)
- Hazelwood (PGH)
- Homewood (PGH)
- East Liberty (PGH)
- Duquesne
- McKeesport
- Clairton
What does Healthy Housing mean for Rebuilding Together?

Our national vision is *safe homes and communities for everyone.*

**Healthy Housing is a fact:**
Where we live not only affects our socioeconomic health, but also our physical health. Lead-based paint poisoning, second-hand smoke, mold, carbon monoxide and falls in the home are significant threats to families, particularly lower-income families.

**Healthy Housing is a movement:**
There is growing consensus for Healthy Homes that is engaging experts and organizations from the World Health Organization, to the US Department of Housing and Urban Development, to the Allegheny County Health Department, to Pittsburgh groups like Women for a Healthy Environment and formerly CCI.

**Healthy Housing is a strategy:**
Rebuilding Together Pittsburgh addresses these health disparities through targeted interventions – repairs and modifications – that improve the health of the home.
Understanding the Problem

The U.S. Census Bureau estimates that more than 5.9 million housing units are substandard with multiple or severe health hazards and that 39 million housing units nationwide contain at least one health hazard.

Some of these hazards may be seen (mold, dust, and pests; deteriorated lead paint or pipes) or unseen (electrical and physical hazards, radon, carbon monoxide, and other poisons and carcinogens) and can cause illness, injury, and even death.

- Radon in homes causes 21,000 lung cancer deaths per year
- More than 24 million homes have significant lead-based paint hazards that put children at risk of the irreversible effects of lead poisoning, including brain damage, seizures, and death
- Home injuries are the leading cause of death for young children
- In 2013, nonfatal falls sent 2.5 million adults over age 65 to the emergency room
What about Indoor Air Quality?
# IAQ Causes and Effects

<table>
<thead>
<tr>
<th>Cause</th>
<th>Effects</th>
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</thead>
<tbody>
<tr>
<td>PM</td>
<td>Cooking stoves; fireplaces; smoking; outdoor air</td>
</tr>
<tr>
<td>SO₂</td>
<td>Cooking stoves; fireplaces; outdoor air</td>
</tr>
<tr>
<td>NO₂</td>
<td>Cooking stoves; fireplaces; outdoor air</td>
</tr>
<tr>
<td>CO</td>
<td>Cooking stoves; fireplaces; water heater; outdoor air</td>
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<tr>
<td>Ozone</td>
<td>Air cleaning device with high voltage; outdoor air</td>
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<tr>
<td>VOCs (such as formaldehyde, terpenes)</td>
<td>Building materials including carpet, plywood (emit formaldehyde); Paint and solvents; Clothing (after dry cleaning) (emits tetrachloroethylene, or other dry cleaning fluids); air fresheners, incense, other scented items; certain plants (emit terpenes)</td>
</tr>
<tr>
<td>Radon</td>
<td>Exuded from earth and rocks such as granite and gneiss in certain locations with low ventilated air and trapped inside houses.</td>
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<tr>
<td>Biological air pollutants (gasses and airborne particulates)</td>
<td>Pets (dander), human (dust from minute skin flakes and decomposed hair), dust mites (enzymes and μm-sized fecal droppings), inhabitants (methylene, wall and air-duct (mold)</td>
</tr>
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</table>
Western Pennsylvania Has Some of the Worst Air Quality in the Country

• Allegheny County (which encompasses Clairton and Pittsburgh) has only achieved full compliance with federal air quality standards once in its entire history—in 2020, when COVID-19 related shut-downs reduced emissions

• Despite that reduction in emissions, residents still experienced an average of one day a week of unhealthy air in 2020

• The region consistently receives “F” grades for air quality from the American Lung Association

• Allegheny County is in the top 2% of all U.S. counties for cancer risk from air pollution

https://www.alleghenyfront.org/air-pollution-can-alter-our-brains-in-ways-that-increase-mental-illness-risk/
RTP Priority Repairs

What are some repairs that RTP prioritizes that have an impact on the health of the resident?

- Roofing, Plumbing, Electrical, HVAC
- Glass Block & Other Windows
- Interior Doors
- Exterior Entry Doors, Storm Doors, BilcoDoors
- Dehumidifier
- Flooring
- Appliances
- Bathroom Exhaust Fans & Kitchen Range Hoods
- Patching and Painting
- Tub/Shower Surrounds
- Grab Bars & Handrails
- Concrete/Cement
- Weatherization & Insulation
- Clutter Removal
- Accessibility
With limited resources, we prioritize repairs with the highest impact on home health.

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**Rebuilding Together Pittsburgh - Table of Services**

<table>
<thead>
<tr>
<th>Modest Scope of Work - $7,500</th>
<th>Medium Scope of Work - $15,000</th>
<th>Large Scope of Work - $30,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Falls Prevention &amp; Accessibility</strong></td>
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</tr>
<tr>
<td>Remove tripping hazards (flooring, carpet, stairs, stairways): Repair stairs</td>
<td>Address tripping hazards (flooring, carpet, stairs, stairways): Repair stairs</td>
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</tr>
<tr>
<td><strong>Moisture &amp; Envelope Repairs</strong></td>
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<tr>
<td>Repair or replace gutters and downspouts; minor brick pointing or masonry repair; replace stucco</td>
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<tr>
<td><strong>Home Hazard Mitigation</strong></td>
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<tr>
<td>Remove hazardous products (old paint, chemicals); Test for elevated radon and mitigate; minor gas leaks</td>
<td>Remove hazardous products (old paint, chemicals); Test for elevated radon and mitigate; minor gas leaks; balanced smoke mitigation; limited pest management</td>
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<tr>
<td><strong>HVAC Repairs</strong></td>
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</tr>
<tr>
<td>Furnace/boiler clean &amp; tune; minor repairs or part replacements</td>
<td>Furnace/boiler clean &amp; tune; major repairs or part replacements; installation of new furnace or boiler</td>
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<td><strong>Plumbing Repairs</strong></td>
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<tr>
<td>Repair leaks in supply lines and/or drains; replace fixtures</td>
<td>Repair leaks in supply lines and/or drains; replace fixtures; new supply lines or drains (associated with general repairs); installation of new hot water heater</td>
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<td><strong>Electrical Repairs</strong></td>
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<tr>
<td>Repair switches and outlets; install GFCI outlets; replace damaged switches and ceiling fans</td>
<td>Repair switches and outlets; install GFCI outlets; replace damaged switches and ceiling fans; run new circuits for additional switches or appliances; install security system</td>
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<tr>
<td><strong>General Repairs</strong></td>
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<tr>
<td>Replace entry or security door; replace 3-2 windows; modest structural repairs to porches and/or floors</td>
<td>Replace entry or security door; replace 3-4 windows; significant structural repairs to porches and/or floors; modest bathroom or kitchen remodel (cabinets, fixtures, flooring)</td>
<td>Replace entry or security door; replace several windows; significant structural repairs to porches and/or floors; modest bathroom or kitchen remodel (cabinets, fixtures, flooring)</td>
</tr>
<tr>
<td><strong>Health Related Social Needs</strong></td>
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<td>Pre-project needs assessment and referrals; coaching and support throughout project implementation; leasing documentation; family logistics to support the construction; service coordination with utilities, Wills, property taxes and other housing-related partners</td>
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## Operationalizing the Work

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<tr>
<th>Contractors</th>
<th>Partners</th>
<th>Volunteers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High quality of work</td>
<td>• Community-based groups lead outreach</td>
<td>• Engagement of stakeholders in the mission of the organization</td>
</tr>
<tr>
<td>• General Contractors &amp; Trades</td>
<td>• Service providers to increase impact</td>
<td>• Corporate sponsors</td>
</tr>
</tbody>
</table>

Contractors

Strengths
Accountability
Scalability
Adaptability

Challenges
Labor shortages
Cultural Competency
Diversity
Partners

Our experienced staff provides application assistance to homeowners who qualify for public services and resources.

And we seek partnerships with service providers, healthcare organizations and community-based groups who can add value – monetary or otherwise – to our client’s home.
Volunteers

As a part of our commitment to creating opportunities for community engagement and investment in our work, Rebuilding Together Pittsburgh welcomes volunteers to participate in a wide range of activities that provide direct support for our clients and staff.

But our reliance on volunteers has dramatically decreased over time.
Owner-Occupied Housing Repair **Must Center** the Residents

- It’s complicated work – no empty buildings
- Economic poverty can create compounding issues for operations and communications
- Medical conditions require special attention and accommodation
- Population most vulnerable to the worst outcomes of COVID-19
- Few opportunities for visual transformation
December 2021

Safe and Healthy Housing

www.rebuildingphilly.org
Meet Devine, the great grandson of RTP homeowner Helen Smith. Devine has severe asthma and was hospitalized twice at CHOP the week before the RTP Block Build. RTP provided multiple home repairs to reduce asthma triggers.
BUILD Health Challenge Grant Partners

Children's Hospital of Philadelphia

Rebuilding Together Philadelphia

Public Health

Mount Vernon Manor

PEOPLE’S EMERGENCY CENTER

LISC Philadelphia

Habitat for Humanity Philadelphia

www.rebuildingphilly.org
BUILD Health Objectives

Combining Community Health Worker visits and home repairs to reduce ED visits & hospitalizations

**BOLD**: Medicaid to pay for home repairs/work with Philadelphia Health Department

**UPSTREAM**: Social/environmental factors – education, smoking cessation

**INTEGRATED**: CHW (CHOP) plus home repair plus community input

**LOCAL**: Parts of West Philadelphia

**DATA-DRIVEN**: CHOP PolicyLab’s evaluation post-repairs

www.rebuildingphilly.org
Collaborative Goal

Combining CHW visits and home repairs to reduce ED visits & hospitalizations

Asthma Education + Home Repairs
Eligibility Requirements

Verified by Community Health Worker

- Child enrolled into CAPP program with 2 ED visits OR 1 hospitalization or observation stay in last year for asthma
- Lives in West/Southwest Philadelphia and needs structural home repairs
- Homeowner or renter
- Low-income by HUD standards (at of below 120% of AMI)
- Family plans to stay in home 3+ years
Possible CAPP+ Home Repairs

Addressing: Moisture/Mold, Dust, & Pests
FY21 CAPP+ Home Repairs

Program Results

Replaced moldy bathtub surround and installed new fixtures
FY21 CAPP+ Home Repairs

Program Results

Removed carpet and installed vinyl plank flooring
FY21 CAPP+ Home Repairs

Program Results

Waterproofed basement walls and installed dehumidifier
Installed dryer vent to outside
FY22 CAPP+ Home Repairs

Program Results

Complete kitchen renovation: including cooking ventilation, pest clean up, and accessibility improvements
What about other health and safety hazards?

Leveraging other funding for safe and healthy homes
Average Per-House Cost for Asthma Mitigation

15k per house for labor and materials

ASSESSMENT: $210/house

STAFF & ADMIN COSTS: 17%

OUTSOURCE:

• IPM
• Subcontractors for most trades
• Behavioral interventions, cleaning support (pets, products, frequency), smoking cessation, food storage
• Clutter removal and food storage containers

BUDGET SOURCES: City, CHOP
CAPP+ Homes Repaired

We just finished the 100th Home!

FY 18-21 Homes Repaired = 97
FY 22 Homes Planned = 50
Total: 147

FY22+ - 50 (Planned)
FY21 - 30
FY20 - 27
FY18-19 - 40
CAPP+ Impact Measuring

How Impact Is Evaluated

- Community Health Worker completes asthma control questionnaire with family before and after counseling & repairs are done.

- Air quality monitors are installed in home for a 2 week period before and after repairs.

- Dust samples from floor are collected before and after repairs.

- Home is inspected for repairs and asthma triggers are noted before and after repairs.
CAPP+ Policy Lab Evaluation

12 Months Post Repairs:

- 50% reduction in nighttime symptoms
- 40% reduction in rescue medication use
- 60% reduction in missed school days
- 90% reduction in emergency and hospital room visits
Home Repairs Have Impact

Homeowner feedback to CHOP

“My son, who is only 3, was born with heart condition. He was starting to have asthma symptoms, no issue with him since repairs were completed. Daughter is doing a lot better – she has been using her inhaler a little less.”

 “[The program] helped me with my asthma, my husband with his allergies, my son with his allergies... I never realized that carpet made it stuffy in the home.”