



53 N. RIVERVIEW STREET, DUBLIN, OH 43017

Historical Survey, Property Condition Assessment, MEP Survey, HazMat Survey



Prepared for:
City of Dublin
Public Works
6555 Shier Rings Road
Dublin, Ohio 43016

Prepared by:
CTL Engineering, Inc.
Department of Building Envelope Services
300 W. Wilson Road Bridge, Suite 110
Worthington, Ohio 432085

CTL Project No. 20070043COL
December 23, 2020





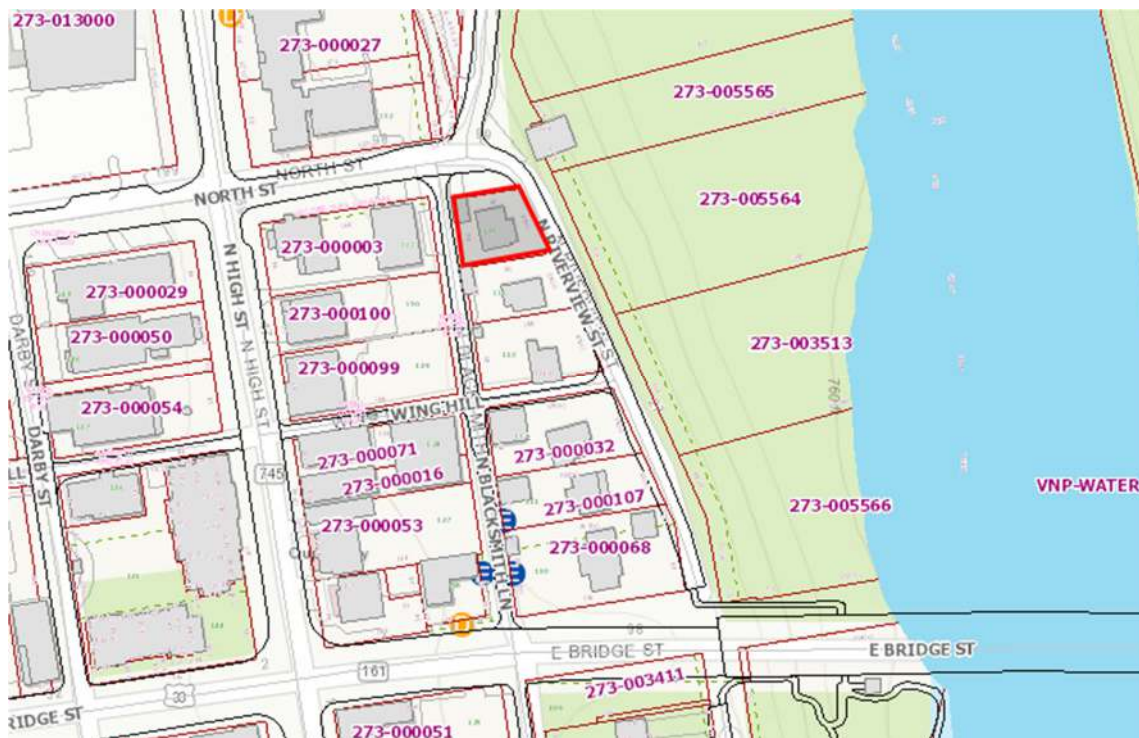
SUMMARY OF FINDINGS

The Summary of Findings is intended to provide a quick understanding of the General Conditions of the site, exterior, interior, hazardous containing materials and mechanical/electrical/plumbing systems for the individual property.

Building Component	Poor	Fair	Good	Usable	Present
Site		√			
Exterior walls	√				
Roof		√			
Windows	√				
Doors		√			
Porch		√			
Out building	√				
Flooring		√			
Interior walls			√		
Ceiling		√			
Kitchen			√		
Bathroom			√		
Hazardous Containing Materials					√
Mechanical/Electrical/Plumbing Systems	√				



Property Summary – 53 N Riverview St	
Franklin County Parcel ID No.	273-000098-00
Current Use of Property	Residential
Property Address	53 N Riverview St, Dublin, OH 43017
City, County, State, ZIP Code	Dublin, Franklin, OH 43017
Client Name	City of Dublin
Contract ID, Date	CTL Engineering, Inc., Project Number 20070043COL, December 3, 2020
Area of Site (acres)	Approximately .11 acres
Area of Building	936 square feet
Number of Stories	1 story
First Developed	1932
Applicable Building Codes	City of Dublin, State of Ohio Current Adopted Code with local amendments
Zoning	R-Residential
Type of Construction	1 Story Wood Frame
Roof Construction	Shingles
Parking	Street parking and at garage at rear of property
Utilities	Gas: Columbia Gas Water: Municipal Sewer: Municipal Power: AEP



CTL Engineering Project Number: 20070043COL



53 N. RIVERVIEW STREET, DUBLIN, OH 43017
Historical Survey and Property Condition
Assessment (PCA) Report



CTL Project No. 20070043COL
December 23, 2020





1.0 HISTORICAL SIGNIFICANCE SURVEY

This single-family home was constructed around 1920 as a one-story home in the Vernacular style. In later years it had an addition added to the back of the home and a roof and concrete porch constructed at the front. The building sits on a concrete block foundation. The exterior wall material is wood shingles and is in poor to fair condition. Most of the exterior wood trim has begun to rot and needs to be replaced. The main roof is an asphalt shingle with a rubber single ply membrane at the closed in room at the back of the home. Both roofs appear to be in fair condition but expect to replace them in the next 5 years. The overall condition of the gutters, downspouts is such that they should be replaced in the next 2-3 years. There are several different styles of windows, none of which are original to the home.

The interior of the home is a mix of original wood flooring, glazed tile and some carpet. The home interior has had some upgrades with newer style kitchen cabinets and bathroom fixtures. The ceiling is lower than a normal home and there are several cracks in the ceilings that are due most likely to settling of the home over time. There are several locations where visible signs of water damage at the ceiling are evident. For the most part a lot of the original wall base and door and window frame trim is still in place and in good condition.

The basement is accessed by wood stairs with the riser missing from one of the stairs. The basement walls are a combination of stone, poured in place concrete and concrete block.

Because of the amount of changes that have taken place both on the outside and on the inside of this home, consideration would need to be given as to if it would be worth the effort to rehabilitate back to its original condition because of the cost. In order for the home to be considered as livable “rent property”, it is highly recommended that the roof be replaced along with all of the exterior wood trim and wood shingles.

The home would take a considerable amount of work and cost to bring it up to current standards of the Residential Code of Ohio. Work required would be electrical, plumbing and mechanical systems as well as Life Safety. Consideration should also be given to meeting the Ohio Energy Code. To meet these requirements, decisions would need to be made if the home should be renovated to meet the “period design” in which it was constructed and how those requirements could be intertwined with current code requirements. Newer more modern construction materials are available that would closely match the style of the original construction materials. The most obvious material difference would be using thermally insulated windows. New windows can be made to match the original style but also meet current energy requirements.

This property is recommended contributing to the Dublin High Street Historic District, as by the previous Historic District and Cultural Assessment.



2.0 PROPERTY CONDITION ASSESSMENT (PCA)

2.1 SITE ASSESSMENT

Overall the site is in fair condition. An overview of the front and back of the residence can be seen in Photo 1 and Photo 2, respectively.

Fence/Retaining Wall/Paving/Access Steps

A stone retaining wall is present along the front perimeter of the property that is approximately 2-ft high and is in poor condition; some areas have failed and vegetation growth is present. The fence along the rear perimeter of the property is in good condition. Two wood fences are located on the north and east of the residence to enclose the backyard and are in good condition.

Concrete walkways and steps are located at the front and rear of the residence for access. These concrete walkways are in fair condition, with minor deterioration signs such as cracking and abrasion (See Photo 3).

Landscaping

In general the landscaping consists of grass on the majority of the property with landscape vegetation at the front entrance of the residence. A mature tree is located on the north of the residence. Overall the landscaping is in fair condition but continuous maintenance is required.

Drainage

No issues were noted for site drainage as it appears to have proper drainage away from the residence and storage barn.

2.2 EXTERIOR BUILDING ASSESSMENT

Walls/Siding

Overall the wood shingle siding is in poor condition and replacement is recommended. On the front porch the siding is pulling away from the structure due to the main electric line attached to the exterior wall (See Photo 5). The shingles area deteriorated and it appears that moisture is trapped behind the paint finish. (See Photo 6).

Windows

The windows are replacement single pane windows with storm window covers and need to be re-sealed (See Photo 7). Basement windows are single pane only and the sealant is in poor condition (See Photo 8).

Doors



Overall the doors are in fair condition and need typical maintenance.

Roof

The residence has a shingle roof that is in fair condition (See Photo 9). The gutters and downspouts are in poor condition and need to be replaced. Photo 10 shows deteriorated soffit boards near the chimney. A failed flashing condition at the chimney can also be seen in Photo 11. The chimney needs tuck-pointed.

Porch/Patio

A porch is located at the front and rear of the residence and is in fair condition. Photo 12 shows the back-porch roof decking that is deteriorated and replacement is recommended.

Garage

The storage garage is in poor condition. See Photo 13 through Photo 16.

The shingle roof and the wood panel siding is in poor condition and needs to be replaced (See Photo 14). The garage doors are operational and the concrete finished floor is in fair condition. Some of the roof decking shows signs of deterioration; a water stained and wood section loss were noted with red arrows (See Photo 16).

2.3 INTERIOR BUILDING ASSESSMENT

Flooring

Carpeted flooring is present in the living room and bedroom areas. Overall the carpeted areas are in fair condition but will need to be replaced when new tenants move in as it is starting to wear. There are remnants of animal residue and odors in the carpet. The kitchen flooring consists of glazed tiles that are in good condition while the bathroom flooring consisted of laminated tiles that are also in good condition.

Walls/Finishes

The wall finishes in the residence are in good condition; it appears that the walls have been painted in recent years. Minor wear was noted.

Ceiling

No areas of potential water infiltration were identified however, it should be noted that the height of the ceiling is lower than current standards allow. The ceilings have a drywall mud swirl finish.

Doors/Windows

The interior wood window and door frames appear to be original to the residence and overall are in good condition. The trim work appears to be original to the home.



Kitchen

The kitchen cabinets and fixtures are in good condition (See Photo 21).

Bathroom

The bathroom is in good condition (See Photo 22). A toilet, sink and bathtub with shower were present.

Basement

Foundation walls that can be seen in the basement are a mix of stone, poured concrete and block (See Photo 23 and 24). A concrete finished floor is present. There were some signs of moisture intrusion from the concrete block foundation mortar joints but nothing significant.

We appreciate the opportunity to provide you with these professional services. If you should have any questions, or need further information, please feel free to contact our office. Please refer to CTL Engineering Project No. **20070043COL** and the project address in all correspondence and inquiries.

Respectfully submitted,

CTL ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read 'Elné Barnard'.

Elné Barnard
Project Manager

A handwritten signature in blue ink, appearing to read 'Mikel Coulter'.

Mikel Coulter, AIA
Department Manager

Building Envelope and Roof Engineering Services



Photo 1 – View of the residence Front (Looking West)



Photo 2 – View of the residence Rear (Looking Northeast)



Photo 3 – View of property from behind rear fence (Looking East)



Photo 4 – View of north elevation of residence (Looking South)



Photo 5 – Main electric line pulling siding off residence



Photo 6 – View of deteriorated shakes on rear of residence



Photo 7 – View of residence window



Photo 8 – View of basement window showing deteriorated siding and window frame



Photo 9 – View of residence shingle roof and deteriorated gutter



Photo 10 – View of deteriorated wood soffit panels



Photo 11 – View of improperly installed chimney flashing



Photo 12 – View of the back porch roof decking showing signs of wood rot



Photo 13 – Overview of the garage (Looking Southeast)



Photo 14 – View of the garage roof and deteriorated siding and shingles



Photo 15 – Interior view of garage



Photo 16 – Interior view of roof decking showing signs of water staining and holes in wood sheathing



Photo 17 – View of the carpeted flooring at the residence main entrance door



Photo 18 – View of the kitchen glazed tile flooring



Photo 19 – View of the living room area



Photo 20 – View of bedroom. This photo also shows a drywall mud topping coat on the ceiling with a swirl pattern.



Photo 21 – View of kitchen



Photo 22 – View of bathroom



Photo 23 – View of basement entrance steps showing a missing riser face and no hand rails



Photo 24 – Overview of basement area



53 N. RIVERVIEW STREET, DUBLIN, OH 43017

Mechanical, Electrical, Plumbing (MEP) Report



CTL Project No. 20070043COL
December 23, 2020



1.0 INTRODUCTION & GENERAL MEP COMMENTS

The site at 53 N. Riverview Street is developed with a free-standing single-family house that appears to date from the early Twentieth Century. The building has mechanical and electrical systems located in a basement area beneath the front of the house and extending into the southwest corner of the house.

In general, the systems are old and have significant problems that suggest major replacements, particularly with the heating and electrical systems. Equipment and fixtures vary in age.

2.0 PLUMBING

Public Utilities

The local municipality, most likely the City of Columbus, provides water for the building. The City of Columbus also provides sanitary sewer services. The house originally had a well for water, but this has been replaced with the municipal service. The original well service is visible on the rear wall of the basement. The municipal water service enters the basement through the front wall. This is a ¾-inch copper service which should be adequately sized for the building. There is a water meter in the front of the basement with a remote reader on the exterior of the house at the southeast corner. No problems were observed with the water service. Water pressure is adequate throughout the building.

The location of the abandoned well in the backyard was not located. We do not believe that the original well water system is still in service. We also observed a cistern outside the back door. These were commonly installed in the late Nineteenth and early Twentieth Centuries and were brick lined structures 5 to 10 feet deep. Typically, these were filled from roof downspouts or from hand pump located above the well. The cover on the cistern was bolted shut, so the interior was not inspected. The cistern is most likely not used as a source of water.

Water Piping

Based on the age of the building, and where visible, the water piping is copper. This includes the plumbing for the kitchen, bathroom and laundry area.

Copper piping can last 50 to 100 years, so no problems would be anticipated unless the building was left unheated and the pipes froze. No current leaks or problems were observed.

DWV Piping

Based on the age of the building and where visible, the drain waste and vent piping inside the house has been upgraded to PVC pipe. The main sewer exits the south side of the house where it ties into a cast iron system. The connection is just above the old boiler. The sewer appears to extend around the south side of the house and is tied into the municipal sanitary sewer that appears to run along N. Riverview Street. No septic systems were observed. The PVC piping should have an almost indefinite life. No problems were observed with the drain system.

Circulation Pumps & Equipment

A single domestic water heater is located in the basement in the southwest corner. This is a Whirlpool 50-gallon gas fired heater. The age was not marked on the unit, but it appears to be 5 to 10 years old.

The water heater system was working. Water heaters are typically replaced only when they wear out or fail. No problems were observed.

Plumbing Fixtures and Restrooms

The building has a bathroom and a kitchen with typical residential fixtures.

Other than checking to make sure that there was hot water and adequate water pressure in the building, we did not evaluate the age and condition of the residential fixtures. The fixture ages will vary in all of the buildings that are part of this project, and will need to be replaced or repaired periodically to maintain proper plumbing services in the homes.

Septic Systems & Wells

We observed no septic systems on the property. There may be an older well which is probably no longer in service. The building has municipal water and sewer services.

Other Equipment

There is no special plumbing equipment.

Gas Lines

The building has a gas service that enters the rear of the building near the southwest corner of the building. The service supplies the water heater, the stove in the kitchen, and two wall mounted heaters on the main floor of the house. The abandoned boiler in the basement appears to have been fueled with only heating oil, and was never converted to natural gas. No problems were observed with the gas supply.

3.0 HVAC

Description

The building was originally heated with a hot water system that included an oil-fired boiler in the basement which was piped to cast iron radiators on the main floor. The oil for the boiler was kept in an above ground tank that is still located at the southwest corner for the backyard. Fuel oil remains in the tank. The original hot water heating service has been replaced with two gas fired wall heaters located in the front room and in the northwest hallway. These are heating only unit with no air conditioning in the house. Currently the house has no air conditioning.

Observations

It is unclear as to whether or not any fuel oil remains in the tank, but the tank should be emptied and removed from the site to prevent any future leaks. The boiler could be removed from the basement, but these are heavy and bulky, and are often abandoned in place. The boiler is a potential source of asbestos gaskets and packings. The main floor radiators could be removed, which will open up some wall areas in this small house.

In regard to the current heating system, the two gas fired units may provide adequate heat to keep the house inhabitable, there is heat in only two areas in the house. The heat will be uneven as some areas have no direct heat. The two heating units are located low on the walls. These present a risk for being touched by children in the house. Any placement of furniture or storage next to the units could be a fire hazard. We would recommend that the heating units be replaced with a furnace and duct system in the basement.

Currently the house has no air conditioning. A central furnace and ducted air system would also allow for the installation of air conditioning.

4.0 ELECTRICAL

Utility Source

The building has a central service that is supplied overhead from a service on the east side of N. Riverview Street. The service is connected at the front center of the house and is routed to a main circuit breaker box which is exposed on the front porch.

System Size

The service size is not labeled, but appears to be only 60-amps or 100-amps in size.

The service is barely adequate for the house. There was most likely a fuse box in the front porch location that was replaced by the current breaker box. One issue with the system is that the connection is pulling away from the front wall of the house. This is a safety concern, and needs to be repaired immediately.

Breaker Boxes

The electrical service box is located on the front wall of the house on the front porch next to the main service connection to the house. It provides circuit breakers for the appliances, lights and outlets.

The size of the box may be a little small for the building. No missing or damaged breakers were observed. The circuit breaker box is a Gould Pushmatic breaker box. These were popular in the late 1950's and early 1960's, and the box probably dates from that period. Pushmatic breakers function well, but it is becoming increasingly difficult to find replacements, and they are

becoming expensive. You may want to plan on replacing the breaker box and the older disconnect box in the next few years.

Expansion Capability

The box has a few empty spaces so that a few additional circuits could be added should the tenant have any special requirements.

Lighting

Lighting varies throughout the building, but is either ceiling light fixtures or lamps plugged into the wall outlets.

The lighting appears to be adequate for the house. All of the fixtures appear to be working properly.

Wiring

Wiring is either older (original) BX metal sheathed cable, or newer Romex wiring. Both are suitable for residential use.

The wiring appears to be adequate for the building. Most of the wiring appears to be professionally installed. The dryer box in the basement is not properly secured.

Outlets

Electrical outlets are located around the walls. The locations and spacing vary in the different areas depending on when the installations were done. Being an older house, some of the outlet spacing may not meet current building code requirements. Due to furniture located in the house, not all of the locations could be examined. No major problems were observed.

Special Fixtures

None noted or inspected.

5.0 IMMEDIATE PLANNING AND REPAIR ITEMS

1. Empty and remove the fuel oil tank in the southwest corner of the back yard. (Photograph 2).
2. The two gas fired wall heaters on the main floor may be a safety factor if there are small children in the house. You may wish to replace these with a conventional gas fired furnace and duct system which could be located in the basement. (Photographs 3 & 4).
3. Resecure the main electric service to the front of the house. (Photograph 5).

4. Secure the dryer connection box in the basement. (Photograph 6).

6.0 MAINTENANCE AND LONG-TERM PLANNING

1. Plan on replacing the Pushmatic circuit breaker box and the original electrical disconnect box in the next few years based on the difficulty in finding replacement breakers (Photograph 7).

We appreciate the opportunity to provide you with these professional services. If you should have any questions, or need further information, please feel free to contact the CTL office. Please refer to CTL Engineering Project No. **20070043COL** and the project address in all correspondence and inquiries.

Respectfully submitted,

A handwritten signature in black ink that reads "David G. Foust". The signature is written in a cursive, flowing style.

David G. Foust, P.E.
Inspector



Photograph 1 – Overview of the house located at 53 N. Riverside Street.



Photograph 2 – A heating oil tank remains in the southwest corner of the back yard and should be removed.



Photograph 3 – A gas fired wall heater by the front door heats the living room.



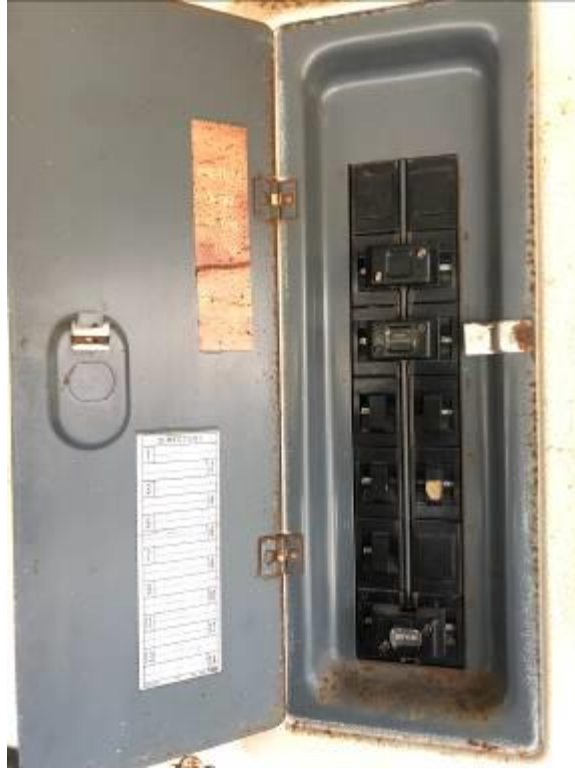
Photograph 4 – A gas fired heater in the rear hallway heats the northwest section of the house.



Photograph 5 – Secure the main electric service which is pulling loose from the front of the house.



Photograph 6 – The electric dryer outlet is not property secured to the wall.



Photograph 7 – An older Pushmatic breaker box is located on the front porch and should be replaced or moved.



53 N. RIVERVIEW STREET, DUBLIN, OH 43017
Hazardous Materials Survey
(HazMat) Report



CTL Project No. 20070043COL
December 23, 2020



1.0 EXECUTIVE SUMMARY

In accordance with our contract, on behalf of the **City of Dublin** (Client), CTL Engineering, Inc. (CTL) performed a Hazardous Materials Survey for the residential property located at 53 N. Riverview St.; in Franklin County, Dublin, Ohio 43017. CTL surveyed the structure to identify Asbestos-Containing Materials (ACMs) and Lead-Based Paint (LBP) that may require special handling prior to the renovation or demolition of the structure. In addition, the survey included limited observations to identify Polychlorinated Biphenyls (PCBs) and evidence of other hazardous materials, including miscellaneous chemicals and mercury.

Due to limitations stated in **Section 7.0** of this report, it is considered a baseline survey. If the structure is to be demolished, additional investigation within the fabric of the structure should first be conducted when destructive sampling techniques can be performed.

Please note that the information provided in the Executive Summary is a brief summary of the findings and should be read in conjunction with the entire report.

Asbestos-Containing Materials

The following asbestos-containing materials, exhibiting asbestos concentration above the EPA regulatory threshold limit of >1%, were identified during the assessment:

HSA	Sample Nos.	Description	Location	Condition	EPA Classification	Est. Quantity
5	5A, 5B	Black Tar (Associated with Rubber Membrane Roof Section)	Northwest Roof Section	Good	CAT II NF	550 SF

HSA – Homogeneous Sample Area; CAT I/II NF – Category I/II Nonfriable; SF - Square-feet

These materials should only be handled by properly certified personnel. All asbestos-containing materials that will be disturbed during any renovation should first be removed and disposed of by a licensed asbestos abatement contractor in accordance with the Asbestos NESHAPS, 40 CFR Part 61, and the OSHA Asbestos in Construction Standard, 29 CFR 1926.1101 and all applicable federal, state and local asbestos regulations.

Assumed Asbestos-Containing Materials

The following suspect materials were inaccessible for sampling, would have required destructive sampling techniques, and/or based on our experience had a high probability of containing asbestos; and therefore, were not sampled. Should these materials be disturbed during renovations, they should be assumed to contain asbestos and removed by a licensed asbestos abatement contractor in accordance with the Asbestos NESHAPS, 40 CFR Part 61, and the OSHA Asbestos in Construction Standard, 29 CFR 1926.1101, unless they are first sampled by a licensed Asbestos Hazard Evaluation Specialist and determined not to be ACMs by laboratory analysis.

HSA	Description	Location	EPA Classification	Condition	Estimated Quantity
-	Boiler Insulation	Basement	RACM	Good	30 SF / 1 Boiler Unit

HSA – Homogeneous Sample Area; RACM - Regulated ACM; SF - Square-feet

Non Asbestos-Containing Materials

The following suspect materials were sampled and found to contain no asbestos when analyzed via PLM:

HSA	Sample Nos.	Description
1	1A, 1B, 1C, 1D, 1E	Hard Plaster (<5,000 SF)
2	2A, 2B, 2C	Ceiling Texture – Kitchen (<1,000 SF)
3	3A, 3B, 3C	Ceiling Texture – Bathroom (<1,000 SF)
4	4A, 4B	12” Brown Floor Tile
6	6A, 6B	Asphalt Roofing – Garage
7	7A, 7B	Tan Window Glaze – Garage
8	8A, 8B	Asphalt Roof – House (Orange Shingles)

Lead-Based Paint

A total of fifty (50) representative painted/coated surfaces were tested for lead content utilizing a hand-held X-Ray Fluorescence Analyzer (XRF), which provides a non destructive quantitative field evaluation of lead content.

Of all the painted surfaces tested, fifteen (15) exhibited concentrations of lead-based paint above the EPA regulatory threshold for lead-based paint of 1.0 mg/cm². These tests include Readings 30-33 and 37-47.

Of all the painted surfaces tested, eight (8) exhibited detectable lead concentrations below the EPA regulatory threshold for lead-based paint of 1.0 mg/cm².

Refer to the attached **Appendix C - XRF Results Table**.

Please note that OSHA does not recognize XRF or Paint Chip Sampling results as a method of validating lead concentrations in paint to determine potential worker's exposure and that it considers any paint with any quantity of detectable lead to be lead containing, and thus regulated. Consequently, personal air sampling during paint abatement or disturbing activities is the only way to determine worker's exposure. Therefore, the OSHA Lead-in Construction Standard (29 CFR 1926.62) applies to all contractors that may disturb existing painted or coated substrates. Contractors that disturb the paint are responsible for complying with all aspects of the OSHA Lead in Construction Standard during lead-based paint disturbance from work activities.

Refer to the attached **Appendix C - XRF Results Table**.

*Based on the presence of Lead-Based Paint, if the structure is to be demolished, the following is recommended: **Demolition Debris Sampling for TCLP Analysis** in accordance with ASTM Standard E 1908-16, Standard Guide for Sample Selection of Debris Waste from a Building*



Renovation or Lead Abatement Project for Toxicity Characteristic Leaching Procedure (TCLP) Testing for Leachable Lead (Pb). TCLP results, will determine if remediation is required, or if demolition debris that will be generated during the proposed demolition is considered characteristic hazardous waste per 40 CFR 261.24 (waste code D008) OR non-hazardous and therefore, may be disposed of in a construction and demolition debris landfill.

Other Hazardous Materials

Mercury-containing Equipment: Two (2) thermostat containing mercury ampoules were observed in the living room and basement. No evidence of spilled mercury was observed at the time of site reconnaissance. The mercury-containing ampoules and any other mercury-containment equipment must be removed and should be handled in accordance with the Ohio EPA's rules governing the disposal of Universal Wastes (OAC 3745-273).

Miscellaneous Materials: Paints, solvents, cleaning products, maintenance products and other miscellaneous chemicals are present in the subject structure. If these materials are not to be re-used, they should be characterized and disposed of in accordance with applicable hazardous waste disposal regulations (40 CFR Part 261).

2.0 INTRODUCTION

In accordance with our contract, on behalf of the **City of Dublin** (Client), CTL Engineering, Inc. (CTL) performed a Hazardous Materials Survey for the residential property located at 53 N. Riverview St.; in Franklin County, Dublin, Ohio 43017. CTL surveyed the structure to identify Asbestos-Containing Materials (ACMs) and Lead-Based Paint (LBP) that may require special handling prior to the renovation or demolition of the structures. In addition, the survey included limited observations to identify Polychlorinated Biphenyls (PCBs) and evidence of other hazardous materials, including miscellaneous chemicals and mercury.

Due to limitations stated in **Section 7.0** of this report, it is considered a baseline survey. If the structure is to be demolished, additional investigation within the fabric of the structure should first be conducted when destructive sampling techniques can be performed.

Site photographs are included in **Appendix A**, sample location plans and a list of occupied rooms are included in **Appendix B**, Summary of XRF Results are included in **Appendix C**, laboratory reports and chain-of-custody forms are included in **Appendix D**, and the certifications of personnel who performed the survey are included in **Appendix E**.

3.0 SCOPE OF WORK and SITE DESCRIPTION

This Hazardous Materials Survey was conducted to determine the type, quantity, condition, and the potential for disturbance of suspected ACM's used in the construction of the subject residential structure due to the proposed renovation of the structure. As the residential structure is currently occupied, the survey did not include destructive sampling in order to investigate concealed spaces within the fabric of the structure, i.e., between walls and ceilings. This survey also included limited investigation of the building for Lead-Based Paints (LBPs), Polychlorinated Biphenyls (PCBs), as well as for evidence of other hazardous materials, including miscellaneous chemicals and mercury containing equipment such as thermostats.

Based on information obtained from the Franklin County Ohio Auditors website, the residence includes a single story structure with a basement consisting of approximately 936 square-feet of floor space and a detached garage, and was built in 1932.

4.0 ASBESTOS SURVEY METHODOLOGY

This asbestos survey was conducted in accordance with the applicable regulations and general guidelines set forth in EPA's *Asbestos Hazardous Emergency Response Act* (AHERA) and rules promulgated under 40 CFR 763, Subpart E.

Specifically, the project included the following tasks:

- Review of existing building plans and/or drawings, previous asbestos survey reports and related information indicating the presence or location of ACMs in the building, if available.
- Survey of the structures by a licensed Asbestos Hazard Evaluation Specialist(s), as per regulations under OAC 3701:34. The survey included a thorough visual and



physical examination of building materials to identify locations of known and/or suspected ACMs.

- Suspect materials were classified as homogeneous according to their installation date, color, texture, and/or hardness as suggested by current EPA sampling protocols. The suspect materials were then divided into Homogeneous Sampling Areas (HSAs) and each sample collected was identified with a unique sample identifier consisting first of a number that correlates to an HSA designation, and then by a letter which indicates the sample sequence within the HSA grouping.

For example, Sample No. 1A indicates the first sample collected from Homogeneous Sampling Area 1. Sample 4B indicates the second sample collected from Homogeneous Sampling Area 4, etc.

- The number of samples collected from each type of suspect material was determined according to the following criteria:

Surfacing Materials: The number of samples and sample locations were determined according to the EPA guidance publication, *Simplified Sampling Scheme for Friable Surfacing Materials* (EPA 560/5-85-030a, October, 1985), a recommended number of 9 samples per HSA or a minimum of 3, 5, or 7 based on the square footage of each HSA.

Thermal System Insulation Materials: The number of samples and sample locations were determined according to the quantity of the material observed, and the Asbestos Inspector's judgment on the homogeneity of the insulation materials, based on field observations. A minimum of three (3) samples were collected from each type of suspect thermal system insulation identified. Materials such as fiberglass and foam insulation are not considered suspect of containing asbestos, and; therefore, were not sampled.

Miscellaneous Materials: The number of samples and sample locations are determined according to the quantity of the material observed, the estimated quantity that will be disturbed during the project, and the Asbestos Inspector's judgment on the homogeneity of the material. Samples are collected "in a manner sufficient to determine whether the material is ACM or not ACM" in accordance with 40 CFR Part 763.86 (c-d). A minimum of two (2) samples were collected from each HSA.

- Bulk samples were collected directly from exposed materials. Prior to sample collection, the surface was sprayed with a surfactant to reduce the potential for fiber release. A complete core or cross-section sample of each material was taken to ensure that each layer of suspect ACM was representative of the parent material. The samples were carefully placed in a labeled sample container and sealed, and the information recorded onto a chain-of-custody form. In addition, sampling locations were noted and suspect materials were photographed.
- As previously stated, since the residential structure is currently occupied, no destructive sampling was performed during the survey, except as indicated. Suspect

materials in concealed areas that are identified via site observations and/or a review of the existing construction drawings are presumed to contain asbestos when not accessible for sampling.

- Appropriate safety precautions were taken, where and when necessary, such as the use of protective clothing/equipment (half-face respirator, latex gloves, etc.).

Hazard Condition Assessment

A condition assessment for each confirmed asbestos-containing material is provided based upon the condition of the material as observed during the survey. The condition of each material is determined according to the following criteria:

General Damage Criteria	Criteria
Good	Not damaged
Fair	Up to 10% overall damage Up to 25% localized damage
Poor	Over 10% overall damage Over 25% localized damage

Sample Analysis

- All samples were initially analyzed in a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) using Polarized Light Microscopy (PLM) and dispersion-staining techniques (EPA Method 600/R-93/116) according to the protocol outlined in 40 CFR 763, Appendix A to Subpart F.
- Because the PLM method has been known to provide false positive or false negative results at low asbestos concentrations, i.e., less than 10%, low asbestos results cannot be guaranteed. Therefore, when asbestos concentrations of friable materials are reported at less than 1%, additional sample analysis using the more accurate Point Count Method may be conducted.
- In some cases, particularly where there is little question about the homogeneity of samples collected from a Homogeneous Sampling Area, if the first sample analyzed from the Homogeneous Sampling Area is positive, the remaining samples may be assumed to contain asbestos and not be analyzed.
- A Homogeneous Sampling Area is determined to contain no asbestos when all the samples from the Homogeneous Sampling Area are analyzed via PLM method and found to contain no asbestos. If all samples collected from a Homogeneous Sample Area exhibit no asbestos content when analyzed via PLM, no additional analysis is conducted.
- If any sample from a Homogeneous Sampling Area is found to contain asbestos, the entire Homogeneous Sampling Area must be assumed to contain asbestos unless additional analysis by Point Count or TEM is conducted, or if additional assessment

and sampling can further delineate the extent of the ACMs within the Homogeneous Sampling Area.

4.1 ASBESTOS SURVEY FINDINGS

Chris Rittenhouse, Ohio Asbestos Hazard Evaluation Specialist #ES35305 conducted the survey on December 10, 2020. A total of twenty-one (21) samples representing eight (8) homogeneous sample areas were collected and submitted to Eurofins/CEI of Cary, North Carolina, a NVLAP-certified laboratory, for analysis.

Please note that some of the samples had multiple layers that were separated and individual layers were analyzed by the analytical laboratory, as required by the OSHA and EPA analytical protocols. Consequently, the total number of samples analyzed (**i.e., 32 samples**) does not match the total number of samples collected during the survey.

Asbestos-Containing Materials

The following asbestos-containing materials, exhibiting asbestos concentration above the EPA regulatory threshold limit of >1%, were identified during the assessment:

HSA	Sample Nos.	Description	Location	Condition	EPA Classification	Est. Quantity
5	5A, 5B	Black Tar (Associated with Rubber Membrane Roof Section)	Northwest Roof Section	Good	CAT II NF	550 SF

HSA – Homogeneous Sample Area; CAT I/II NF – Category I/II Non-friable; SF - Square-feet

These materials should only be handled by properly certified personnel. All asbestos-containing materials that will be disturbed during any renovation should first be removed and disposed of by a licensed asbestos abatement contractor in accordance with the Asbestos NESHAPS, 40 CFR Part 61, and the OSHA Asbestos in Construction Standard, 29 CFR 1926.1101 and all applicable federal, state and local asbestos regulations.

Assumed Asbestos-Containing Materials

The following suspect materials were inaccessible for sampling, would have required destructive sampling techniques, and/or based on our experience had a high probability of containing asbestos; and therefore, were not sampled. Should these materials be disturbed during renovations, they should be assumed to contain asbestos and removed by a licensed asbestos abatement contractor in accordance with the Asbestos NESHAPS, 40 CFR Part 61, and the OSHA Asbestos in Construction Standard, 29 CFR 1926.1101, unless they are first sampled by a licensed Asbestos Hazard Evaluation Specialist and determined not to be ACMs by laboratory analysis.

HSA	Description	Location	EPA Classification	Condition	Estimated Quantity
-	Boiler Insulation	Basement	RACM	Good	30 SF / 1 Boiler Unit

HSA – Homogeneous Sample Area; RACM - Regulated ACM; SF - Square-feet

Non Asbestos-Containing Materials

The following suspect materials were sampled and found to contain no asbestos when analyzed via PLM:

HSA	Sample Nos.	Description
1	1A, 1B, 1C, 1D, 1E	Hard Plaster (<5,000 SF)
2	2A, 2B, 2C	Ceiling Texture – Kitchen (<1,000 SF)
3	3A, 3B, 3C	Ceiling Texture – Bathroom (<1,000 SF)
4	4A, 4B	12” Brown Floor Tile
6	6A, 6B	Asphalt Roofing – Garage
7	7A, 7B	Tan Window Glaze – Garage
8	8A, 8B	Asphalt Roof – House (Orange Shingles)

5.0 LIMITED LEAD-BASED PAINT (LBP) SURVEY

Mr. Brad Keller of CTL performed the Limited Lead-Based Paint Survey on December 10, 2020. A total of fifty (50) representative painted/coated surfaces were tested for lead content utilizing a hand-held X-Ray Fluorescence Analyzer (XRF), which provides a non destructive quantitative field evaluation of lead content.

Of all the painted surfaces tested, fifteen (15) exhibited concentrations of lead-based paint above the EPA regulatory threshold for lead-based paint of 1.0 mg/cm². These tests include Readings 30-33 and 37-47.

Of all the painted surfaces tested, eight (8) additional painted surfaces exhibited detectable lead concentrations below the EPA regulatory threshold for lead-based paint of 1.0 mg/cm².

Refer to the attached **Appendix C - XRF Results Table**.

Please note that OSHA does not recognize XRF or Paint Chip Sampling results as a method of validating lead concentrations in paint to determine potential worker’s exposure and that it considers any paint with any quantity of detectable lead to be lead containing, and thus regulated. Consequently, personal air sampling during paint abatement or disturbing activities is the only way to determine worker’s exposure. Therefore, the OSHA Lead-in Construction Standard (29 CFR 1926.62) applies to all contractors that may disturb existing painted or coated substrates. Contractors that disturb the paint are responsible for complying with all aspects of the OSHA Lead in Construction Standard during lead-based paint disturbance from work activities.

*Based on the presence of Lead-Based Paint, if the structure is to be demolished, the following is recommended: **Demolition Debris Sampling for TCLP Analysis** in accordance with ASTM Standard E 1908-16, Standard Guide for Sample Selection of Debris Waste from a Building Renovation or Lead Abatement Project for Toxicity Characteristic Leaching Procedure (TCLP)*

Testing for Leachable Lead (Pb). TCLP results, will determine if remediation is required, or if demolition debris that will be generated during the proposed demolition is considered characteristic hazardous waste per 40 CFR 261.24 (waste code D008) OR non-hazardous and therefore, may be disposed of in a construction and demolition debris landfill.

6.0 OTHER HAZARDOUS MATERIALS

Mercury-containing Equipment: Two (2) thermostats containing mercury ampoules were observed in the living room and basement. No evidence of spilled mercury was observed at the time of site reconnaissance. The mercury-containing ampoules and any other mercury-containment equipment must be removed and should be handled in accordance with the Ohio EPA's rules governing the disposal of Universal Wastes (OAC 3745-273).

Miscellaneous Materials: Paints, solvents, everyday cleaning products, maintenance products and other miscellaneous chemicals are present in the subject structure. If these materials are not to be re-used, they should be characterized and disposed of in accordance with applicable hazardous waste disposal regulations (40 CFR Part 261).

7.0 LIMITATIONS and EXCEPTIONS

7.1 CTL Engineering has prepared this report for your use, in accordance with generally accepted practices and industry and professional standards applicable to similar work. The information obtained in this report is site-specific and pertains to this project only.

7.2 The conclusions provided in this report are based on data collected from individual bulk sampling locations. Conditions between bulk sample locations may vary and it should not be expected that they will be precisely represented by any one bulk sample.

In the event that any previously unidentified suspect ACMs are encountered, those materials should be sampled and assessed by a licensed Asbestos Inspector or assumed to contain asbestos and treated accordingly. Should any additional ACMs be discovered, only properly trained and licensed personnel should perform work activities that may disturb these materials. Moreover, if additional hazardous materials are discovered during renovation they should be handled according to all federal, state, and local regulations.

7.3 Although this proprietary report was prepared for the exclusive use of the **City of Dublin (Client)** it may be relied upon by any applicable federal, state, and local government regulatory agencies, provided that CTL Engineering is also informed, in writing, and that the use of the report is subject to the limitations and exceptions set forth in the report, as well as the terms and conditions contained in the original contract documents signed by CTL Engineering and the Client.

CTL Engineering will not distribute or publish this proprietary report to any third party without the Client's written consent, except as required by law or a court order. Any unauthorized use of or reliance on this report by any third party shall



release CTL Engineering from any liability resulting from such use or reliance.

- 7.4** Bulk asbestos samples will be retained in the laboratory for thirty (30) days from the date of their analysis, after which, these will be discarded, unless otherwise instructed by the Client. This asbestos survey covered the building materials of the referenced structure(s), with the exception of the inaccessible portions if previously noted. The liability of CTL Engineering, with regard to professional error and omissions, cannot be in excess of the fee charged for this project.
- 7.5** This report, including the estimated quantities provided herein, is not intended for use in lieu of Asbestos Abatement Design Specifications for the solicitation of abatement bids. Abatement contractors shall visit the site and prepare their own estimates of ACM quantities prior to submitting abatement bids.
- 7.6** The survey included a thorough visual and physical examination of easily accessible building materials to identify locations of known and/or suspect ACMs by a licensed Asbestos Hazard Evaluation Specialist. The survey was limited by a time constraint set forth by the Client with personnel allotted 1.5 hours within each of the occupied residence to perform the survey work. No access was available to the attic. If the structure is to be demolished, additional investigation within the fabric of the structure should first be conducted when destructive sampling techniques can be performed.
- 7.7** The opinions expressed in this report are based on CTL Engineering's experience, review of previous reports, and other information, if made available. This survey evaluated the conditions that existed at the time of investigation of the project areas, and does not warrant against future alteration of conditions at the subject site, or subsequent changes in environmental regulations. CTL Engineering has prepared this report for your use, in accordance with generally accepted hazardous material survey practices.
- 7.8** CTL Engineering warrants that the services, findings, and/or recommendations provided herein have been performed in accordance with procedures, practices, and standards generally accepted in the environmental consulting profession for use in similar assignments in the same locale and time frame. ***Although this assessment was conducted during COVID-19 pandemic and some travel and other restrictions were in place, CTL followed CDC guidelines and no exceptions were noted.*** No other warranty is expressed or implied.

We appreciate the opportunity to provide you with these professional services. If you should have any questions, or need further information, please feel free to contact our office. Please refer to CTL Engineering Project No. **20070043COL** and the project address in all correspondence and inquiries.

Respectfully submitted,



CTL ENGINEERING OF OHIO, INC.



Chris Rittenhouse
Asbestos Hazard Evaluation
Specialist #ES35305



Brad Keller, C.P.G
Environmental Scientist



Matt McClelland
Environmental Project Manager
(Technical Review)