REPORT OF
PROPERTY CONDITION ASSESSMENT
FINAL REPORT

PREPARED FOR:

TEXAS DEPARTMENT OF HOUSING & COMMUNITY AFFAIRS
P.O. BOX 13941
Austin, TX 78711-3941

APV REDEVELOPMENT CORPORATION
2640 Fountain View
Houston, Texas 77057

SUBJECT PROPERTY:

TELEPHONE ROAD ELDERLY APARTMENTS
6000 TELEPHONE ROAD
Houston, Texas 77087

PREPARED BY:

PDG ARCHITECTS
3100 Weslayan, Suite 200
Houston, Texas 77027

PDG PROJECT NO.:
17146

DATE OF REPORT:
28-Feb-19

DATE ON SITE:
19-21-Apr-18
Property Description

The property known as Telephone Road Elderly Apartments, located at 6000 Telephone Road, Houston, Texas is a mid-rise apartment complex consisting of 200 living units with supporting facilities for tenant services and recreation that belongs to the client and recipient of this report Houston Housing Authority. The living units are organized into 180 one bedroom and 20 two bedroom units in a seven story building located on the east side of Telephone Road between Dixie Drive and Bellfort Street. The property appears to have been constructed in the mid to late 1970’s.

The property is configured in three wings extending from a central core containing an elevator lobby, administration offices and a circulation area. The wings extend to the north, south and northeast. The first floor of the north wing contains areas for recreation, arts & crafts and assembly as well as the main mechanical and electrical service areas. Residences for elderly tenants occupy all the remaining areas of the building. Parking for tenants is available to the north and visitor parking is located south of the east wing. Outside recreational areas are located to the south and west of the building. Primary access is from Telephone Road on the east side of the facility.
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1.0 EXECUTIVE SUMMARY

1.1 Project Summary

PDG was retained by Houston Housing Authority on March 19, 2018 to conduct a Property Condition Assessment of the facility at 6000 Telephone Road which is described and documented in this report. Property improvements are summarized in the following table:

<table>
<thead>
<tr>
<th>Identity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Type/Occupancy</td>
<td>Occupancy Type R1 – Based on 1997 Certificate of Occupancy</td>
</tr>
<tr>
<td>Number of Floors</td>
<td>7</td>
</tr>
<tr>
<td>Tenant Characteristics</td>
<td>Apartments for Elderly Tenants</td>
</tr>
<tr>
<td>Ancillary Buildings</td>
<td>None</td>
</tr>
<tr>
<td>Gross Floor Area</td>
<td>162,597 SF</td>
</tr>
<tr>
<td>Net Rentable Area</td>
<td>111,672 SF</td>
</tr>
<tr>
<td>Substructure</td>
<td>Concrete slab on grade with drilled piers.</td>
</tr>
<tr>
<td>Superstructure</td>
<td>Concrete frame with interior load bearing walls supporting concrete planks</td>
</tr>
<tr>
<td>Exterior Walls</td>
<td>Brick veneer over metal studs and sheathing, assumed not verified.</td>
</tr>
<tr>
<td>Roof Construction</td>
<td>Concrete planks with no topping slab.</td>
</tr>
<tr>
<td>Site Area</td>
<td>Approximately 3.6 Acres</td>
</tr>
<tr>
<td>Year of Construction</td>
<td>Approx. 1975</td>
</tr>
<tr>
<td>Date of Certificate of Occupancy</td>
<td>November 25, 1997 as City of Houston Housing Authority</td>
</tr>
<tr>
<td>Parking Accommodations</td>
<td>136</td>
</tr>
<tr>
<td>Accessible Spaces</td>
<td>6</td>
</tr>
<tr>
<td>Climate Control – Heat</td>
<td>Electric heat strips at the point of cooling</td>
</tr>
<tr>
<td>Climate Control – Cooling</td>
<td>Chilled water to remote AHU’s</td>
</tr>
<tr>
<td>Domestic Hot Water</td>
<td>Hot water loop from two boilers</td>
</tr>
<tr>
<td>Electrical Service</td>
<td>Pole mounted XFRM @ 480/277, 3Ph, 4W, to 2000A panel</td>
</tr>
<tr>
<td>Electrical Distribution</td>
<td>Main service to 12 circuit branch panel in apartments</td>
</tr>
<tr>
<td>Electrical Wiring</td>
<td>Copper branch circuits</td>
</tr>
<tr>
<td>Elevator</td>
<td>Two passenger units original hydraulic</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Common areas sprinkled, rooms not sprinkled</td>
</tr>
<tr>
<td>Fire Alarm</td>
<td>Local in apartments</td>
</tr>
<tr>
<td>Flood Zone</td>
<td>X (Not in 100 year flood plain)</td>
</tr>
<tr>
<td>Seismic</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Wind Zone</td>
<td>Zone II, Exposure B</td>
</tr>
<tr>
<td>Visibility From Street</td>
<td>Good from the Telephone Road</td>
</tr>
<tr>
<td>Adjacent Properties</td>
<td>J.P. Cornelius Elementary School, Retail, Commercial</td>
</tr>
</tbody>
</table>
1.2 Overall Condition of the Property

Based the observations of PDG and our consultants, the property and supporting infrastructure of the Telephone Road Elderly Apartments located at 6000 Telephone Road are in an overall condition that could be described as good. The current physical condition of the building and grounds appears to adequately support the operation of the property as housing for elderly tenants. The assessment of this property and this report of findings and conclusions were conducted based on guidelines contained in ASTM E2018-15. Observations were limited to what can be discerned by visual means, review of available documentation, and interviews with available persons familiar with the history or operations of the building. Limited invasive and destructive testing (roof cores) was conducted however no systems were operated to determine functionality.

The cost of recommended immediate deficiencies and items that require rehabilitative effort are listed in the two following sections. We have included for planning purposes an overall cost estimate to renovate the entire complex to a condition that would sustain the current level of occupancy for an additional 30 years. This is possible given the overall condition of the building and simplicity of the scope of the renovation effort. The cost estimate is included in Appendix K.

1.3 Immediate Deficiencies

This category of cost item typically relates to deficiencies that affect life safety, code issues, or accessibility. Often items are included that are in a state of imminent failure and in that event would cause significant damage to supported or associated systems or have a significant impact on expenses or income.

<table>
<thead>
<tr>
<th>Immediate Deficiencies (Immediately necessary repairs or replacement)</th>
<th>Cost Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The apartments we observed did not have GFCI outlets near the kitchen sink and the lavatory in the toilet. This system must be examined and the outlets installed immediately.</td>
<td>$25,000.00</td>
</tr>
<tr>
<td>2. The temperature of the domestic hot water supply was 127 Deg.F. The required minimum is 140 Deg.F. Low hot water temperature can provide an environment conducive to the development of Legionaries Disease. This may be due to missing insulation or the temperature setting on the boilers.</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>3. The three chilled water coils in the air handlers supplying outside air to the corridors need to be replaced due to having frozen last winter.</td>
<td>$30,000.00</td>
</tr>
</tbody>
</table>

Accessibility

<table>
<thead>
<tr>
<th>Accessibility</th>
<th>Cost Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minor corrections noted in accessibility report.</td>
<td>$10,000.00</td>
</tr>
</tbody>
</table>

**Total Immediate Deficiencies** $70,000.00
1.4 Recommended Rehabilitation Items: The table below lists those items which PDG believes need to be rehabilitated, repaired or replaced based on the item being at the end of its useful life or its current condition presents a hazard or threat to life safety. The property is assumed to remain in its current level and type of occupancy with no significant renovations.

<table>
<thead>
<tr>
<th>Rehabilitation Item Description</th>
<th>Quantity</th>
<th>Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site &amp; Exterior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Rehabilitation Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MEP Systems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Chillers</td>
<td>2</td>
<td>$149,500</td>
<td>$299,000.00</td>
</tr>
<tr>
<td>Repair Outside Air Units</td>
<td>3</td>
<td>$10,000</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Repair Boilers</td>
<td>2</td>
<td>$5,000</td>
<td>$10,000.00</td>
</tr>
<tr>
<td><strong>Subtotal MEP Systems</strong></td>
<td></td>
<td></td>
<td>$339,000.00</td>
</tr>
<tr>
<td><strong>Interior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Rehabilitation Required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.5 Additional Investigations

As an adjunct to the physical condition assessment detailed in this report PDG was authorized to conduct five enhanced investigations that include the following:

- Site drainage and sanitary sewer investigation for condition and location.
- Civil infrastructure investigation and compliance with City of Houston regulations
- Structural investigation of the building.
- Elevator investigation.
- Electrical and mechanical systems investigation.

The results of these investigations and how the property is impacted by the reported conditions are detailed in Appendices E thru J. At the current time we do not recommend additional investigations.

1.6 Project Condition Summary

Telephone Road can be described as exhibiting an appearance that is generally clean, competently managed, and livable. Given the original construction date of approximately 1977, interior upgrades in 1998 and an exterior face lift in 2002 the facility is in overall good condition. The condition of the major elements of the property is summarized as follows:

- Building Frame & Envelope – The building was originally constructed using a structural frame typical of hospitality style buildings such as hotel or motel. The structural frame is
in good condition and due to the 2002 envelope upgrade the outside walls are serviceable if somewhat utilitarian in appearance.

- **Doors & Windows** – The various entrances to the buildings have been repaired or modified to improve access/egress or security. The windows were replaced with quality aluminum single hung sash in 2002.
- **Interiors** – While well used the interiors are clean and serviceable. Appliances are at the end of their service life. Some finishes have been upgraded as tenants leave.
- **Utility Services** – Plumbing is in good condition with the domestic water piping having been replaced in 1998. Interior toilet fixtures are in good condition. Electrical is fair, and HVAC is fair. Electrical grounding and bonding presents a life safety hazard in all of the units.
- **Roof Areas** – The building was reroofed in 1998 and is in poor condition.
- **Paving/Parking** – The circulation and parking areas are in good condition.
- **Drainage** – Site drainage is good with no onsite flooding during heavy rains. The catch basins in the parking areas will need to be rebuilt. The site has not flooded.
- **Sidewalks** – The flatwork is generally in good condition and well drained.
- **Landscaping** – Exterior amenities and plant materials are well planned and maintained.
- **Accessibility** – The property is generally accessible and accommodation for handicapped persons is good.

### 2.0 LIMITATIONS

#### 2.1 Reliance & Beneficial Use

PDG Architects provides the results of the Property Conditions Assessments (PCA). This report has been prepared for and can be relied upon by the Texas Department of Housing and Community Affairs (TDHCA), the Client, APV Redevelopment Corporation, Houston, Texas, and any persons assigned by the client. PDG Architects agrees to cooperate in answering questions by any concerned parties in connection with the securitization of this report. This report has been prepared for the exclusive use of the referenced client for specific application to the subject site. The preparation of the report was modelled on the generally accepted industry standards of practice for building inspection services, including ASTM E-2018-15, Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process and TDHCA’s Property Condition Assessment Guidelines.

PDG will not materially benefit from the Development in any other way than receiving a fee for performing the PCA and that the fee is in no way contingent upon the outcome of the assessment. PDG has read and understands the requirements outlined in Section 11.306 of the TDHCA’s 2019 Real Estate Analysis Rules (10 T.A.C. 11.306).

All persons who have a property interest in this report hereby acknowledge that the Department may publish the full report on the Department’s website, release the report in
response to a request for public information and make other use of the report authorized by law.

The statements in this report are professional opinions about the present condition of the subject property and the cost of renovation for another 30-40 years of service. They are based upon visual evidence available during an inspection of all reasonably accessible areas of the property. We removed very limited areas of surface materials, performed limited (roof cores) destructive testing and moved no furnishings. The study is not an exhaustive technical evaluation. Such an evaluation would entail a significantly larger scope of work than was determined for this project. Accordingly, we cannot comment on the condition of systems that we could not see, such as buried structures and utilities, nor are we responsible for conditions that could not be seen or were not within the scope of our services at the time of inspection.

We did not undertake activities that would completely assess the stability of the building or the underlying foundation soil. Likewise, this is not a seismic or windstorm assessment. Our on-site observations pertain only to specific locations at specific times on specific dates. Our observations and conclusions do not reflect variations in conditions that may exist, in unexplored areas of the site, or at times other than those represented by our observations. This report and conclusions herein are based upon data collection on 04-07Apr18.

2.2 Opinions of Probable Cost

Based upon observations during our site visit and information received from our interviews with building management and service personnel, which for the purpose of the PCA was deemed reliable, PDG prepared general-scope Opinions of Cost based on appropriate remedies for the deficiencies noted. Such remedies and their associated costs were considered commensurate with the Property's position in the market and prudent expenditures. These opinions are for components of systems exhibiting significant deferred maintenance, and existing deficiencies requiring major repairs or replacement. Repairs or improvements that could be classified as (i) cosmetic, (ii) decorative, (iii) part or parcel of a building's renovation program or to reposition the asset in the marketplace, (iv) routine or normal preventative maintenance, or (v) that are the responsibility of the tenants were not included.

Opinions of costs included in this report should be construed as preliminary estimates. Actual costs most probably will vary from the consultant's opinions of probable costs due to a variety of factors including design, quality of materials, contractor selected, market conditions, and competitive solicitation. Based on observations of readily apparent conditions, there may be a number of renovation costs that are recommended. These costs are identified in the various sections of this report and are summarized in the attached cost estimate. Costs for routine or normal preventive maintenance, or a combination thereof, are not included.

Conditions, codes, covenants and restrictions which may be part of the legal deed of title to the property, and which may vary in description of property boundaries, easements or dedications have not been disclosed or reviewed.
Although it is assumed that the noted improvements were constructed in compliance with contemporary building codes and standard building practices at the time of construction, our survey does not include a detailed review to determine compliance with local Building Department codes, Fire Department requirements, or Planning Department ordinances.

Due to limitations of the survey and investigation process, and the necessary use of unverified data furnished by others, users of this report are cautioned that PDG cannot assume liability if actual conditions vary from the information contained herein.

3.0 INTRODUCTION

3.1 Background
PDG was retained by the report recipient to conduct this investigation in order to provide an objective, independent, professional opinion of the potential near term repair and renovation costs associated with the subject property. Six of the dwelling units were accessed and inspected to give clarity to the overall condition of the property. In addition, representative mechanical spaces, attics, and exterior and common areas were inspected. Enhanced investigations were performed to observe and record the condition of the mechanical and electrical components, the site and civil components, the structural condition of the property, storm and sanitary sewer systems. These reports are included in appendices C through H. Photographs of the subject property were taken during the site inspection.

Inspectors: Dan M. Sharp, AIA
Inspection Date: 04-07 Apr 18
Weather: Mid 80’s, Sunny to partly cloudy
Access Limitations: None
Plans Available: 1998 – 6000 Telephone Road Modernization
Molina/Moseley JV Architects
Interior Renovations & MEP System Upgrades

2002 – Exterior Wall Restoration Project
MACTEC Engineering & Consulting
Complete Restoration of Building Envelope

3.2 Scope of Work
The purpose of this Property Condition Assessment (PCA) and this Property Condition Report (PCR) report is to determine and record the current condition of the property as well as a renovation budget for a scope of work to improve the property for another 30 – 40 years of operation at the current level.

This PCA has been performed in general accordance with ASTM E-2018-15, Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process. The assessment is based upon interviews with management and local agencies, a review of
available documents and a visual examination of the property. The physical examination included a review of buildings, foundations, roofs, exterior/interior walls, mechanical systems, doors and windows, interior elements, landscaping, paved areas and utilities. The scope of the work included: The performance of a field inspection of the Telephone Road Elderly Apartments, conducted by individuals trained in building engineering and construction practices. Interviewing of staff regarding the condition of the facility, common areas, and known physical/equipment deficiencies were also conducted. Interviews were also conducted with local officials regarding zoning and code compliance at the property, and receipt of zoning/building code certification.

3.3 Definition of Terms
The following definitions and reference standards are routinely utilized within the text of this report:

**Excellent:** Component or system is in “like new” condition requiring no rehabilitation or repair to meet the expected service requirements. Normal preventative maintenance remains a requirement.

**Good:** Component or system is sound and performing its expected service requirements, although it may show signs of normal wear and tear. Some minor repair or rehabilitation work may be required and normal preventative maintenance remains a requirement.

**Fair:** A component or system appears to be meeting the expected service requirements but shows signs of considerable wear and tear and is likely nearing the end of its’ service life. Replacement or reconditioning should be planned for the near term of 1 to 3 years.

**Poor:** Component or system falls into one or more of the following categories: (a) Evidence of previous repairs not in compliance with commonly accepted practices, (b) Workmanship not in compliance with commonly accepted standards, (c) Component or system is obsolete, (d) Component or system cannot be relied upon to continue meeting the service requirements as a result of having exceeded its expected service life, (e) Evidence of persistent deferred maintenance resulting in a state of disrepair, and/or (f) Present condition could contribute to or cause the deterioration of other adjoining elements or systems. Repair or replacement is required.

The above definitions are determined by comparison to other buildings of similar age, construction type and service requirements.

**Recommended Additional Investigations/Inspections:** Consist of observed or probable physical deficiencies that require further investigation by a licensed professional or technical service company to better determine the risk, recommended course of action and cost of repairs required.
4.0 BUILDING OVERVIEW

4.1 Structural Elements

4.1.1 Substructure – No documentation is available from the original construction or subsequent renovations that might offer detailed information as to how the buildings and supporting infrastructure may have been constructed. However, much can be inferred or judged from evidence and experience with this building type. The superstructure as described below is likely supported on concrete spread footings founded at least five feet below finish floor. The load bearing walls would have been supported on strip footings at the same depth. All visual evidence indicates that the substructure is stable and serviceable. Large trees were kept away from the foundation preventing damage to the slab on grade by intrusive root systems.

4.1.2 Superstructure – The building is framed with poured in place concrete columns and spandrel beams. Floors consisting of 8 inch thick precast concrete planks with a 2 inch topping slab are supported on loading bearing CMU walls that separate the units. The CMU walls are carried on transfer beams at the second floor. The roof deck consists of concrete planks without a topping slab relying for rigidity solely on the grouted joints between the planks. See Section 4.4 of the structural engineer’s report in Appendix B for a discussion regarding the absence of the topping slab.

4.2 Building Envelope

4.2.1 Walls/Screens/Fenestration – The existing metal panel cladding of the exterior of the building is the result of a modernization project started in 2002 and completed in 2003. The contract documents were produced by MACTEC Engineering & Consulting. However, based on field observations and removal of the panels in the field, the system was not installed as required by the contract documents. This may have been the result of adjustments made at the time the shop drawings were approved.

The design of the panel installation as confirmed by field observations allows the panel to be attached to the brick veneer. The PDG Team questions the ability of the brick to accept the wind load imposed by the panel attachment system. It must also be noted that the panel system functioning as a weather barrier has performed as expected and no leaks have been reported.

The windows in the entire building were replaced at the same time the metal panels were installed. These new units are identified as Alenco 1000 single hung aluminum sash glazed with single pane tempered glass. These windows are in good condition and will accept 5/8’’ insulated glazing units by using narrower glazing stops. No leaks were reported during the recent hurricane Harvey storm event.

Near the top of the wall just below the parapet a narrow band of flush wall panels was installed as part of the 2002 design. These panels have warped due to thermal
expansion. This condition is the result of installing the panels without enough space between them. At this time this is more of an aesthetic issue than a compromise of the panel system, and there is no evidence of leaks in that area.

4.2.2 Exterior Doors & Openings – Three types of doors allow access to the first floor of the facility. Pedestrians normally use four sets of doors in a vestibule configuration, two with sliding doors and two with swinging doors. Four standard hollow metal doors provide access to mechanical areas and storage while three more serve as the exit points from the stair towers. An overhead rolling door serves as access to the main mechanical area. While all these doors are in serviceable condition they will need to be replaced over the next ten years. None of the pedestrian entrances are glazed with insulated glass.

The doors at the main entrance are automatic sliding units set up as a vestibule.

Doors on the west side of the building are typical aluminum framed units.
4.2.3 Roofing – The roof of the seven story building is supported by a deck consisting of precast concrete planks. Observations indicate there is no 2 inch topping slab on the planks as is typical for the floors below. All of the roof cores indicate that a layer of 1 inch foam board was adhered to the planks. Roof slope was achieved by using tapered lightweight concrete over the foam board to which the multi-ply membrane was applied. Repairs were attempted by applying the repair membrane over the original gravel ballast. This is not an acceptable way to make a repair.

The original metal coping was covered with a modified bitumen membrane. It appears that the overflow scuppers visible from the roof side of the parapet were not designed into the renovation of the wall system. There is evidence of them from the ground. The roof has multiple penetrations to accommodate the exhaust fans and roof drains.

4.3 Interior Elements – There are basically two types of apartments, a one bedroom 535 square foot unit and a two bedroom 770 square foot unit. For all practical purposes the living/dining/kitchen areas are the same for both units. Finishes in the units are serviceable and are upgraded on a regular basis as tenants rotate out of a lease. Accessibility is uniformly good.

The size of a unit is a function of the structural CMU walls that separate them. These are the walls that support the concrete floor planks. These walls must line up vertically and therefore eliminate any efficient means of altering the size of a unit.

The exposed bottom surface of the concrete plank is the finished ceiling in each unit. The joints in the plank are visible and the surface is coated with a textured paint. This also means that any flexibility in lighting location is compromised.

Kitchens are equipped with small appliances and minimal cabinet space. Bathroom fixtures are normal size and are equipped with functional accessibility accessories.
Interiors corridors are clean, well lighted, and serve as supply for outside air.
The precast panels form the ceiling or the apartments.
The lights are mounted directly to the panel.

4.4 Plumbing Systems – According to management the plumbing systems function reasonably well. Hot water is supplied via supply and return piping by two boilers located in the first floor mechanical room. The piping for these systems was replaced in 1998 with Type L Copper. Inside the units the plumbing is copper. Interior plumbing fixtures are typically in good condition.

Hot water is supplied to the units via two 750,000 BTUH boilers. At the time of the inspection the temperature in the hot water loop was 127 Degrees Fahrenheit, 140 is the minimum. This is too cool and can result in the propagation of legionnaires disease, particularly among an older population. The problem was reported to management.

A total of 16 waste and vent stacks serve the units. Each riser is located in a chase between the bathroom and kitchen. This chase also provides space for the roof drains. The material for the waste piping is cast iron and appears to be in good condition but should be cleaned. Sanitary waste is piped from the building to a manhole in the Telephone Road right of way. The material is cast iron and an appropriate number of cleanouts are installed.
Two boilers provided hot water to the units. The flue system on the boilers needs repair.

The fire pump and tanks for the facility appear to be in fair condition.

4.5 Heating Ventilation & Air Conditioning – The facility operates on a central air cooled chiller system that circulates chilled water from the ground level mechanical yard up through the buildings to the individual units. Three chillers are in service all of which have reached the end of their useful life. The chilled water piping has also reached the end of its normal service life.

Each apartment is served by an individual fan coil unit supplied by the chilled water loop and controlled by a local thermostat. Heat is supplied by an electric heat strip in the fan coil unit. Outside air is supplied by three ground floor air handling units that duct air to each floor that is then used to pressurize the hallway. Roof mounted exhaust fans draw air upward from the individual apartments to be discharged at the roof level.

While kitchen and bath exhaust appeared to be adequate in the units visited, it was noted while on the roof that some of the exhaust fans were not working which would mean the exhaust for those units was not working. All of the windows in the units are operable single hung sash which if opened will allow fresh air into the rooms.

The public and administrative areas on the first floor, west wing, are all supplied by ceiling mounted air handling units supplying air to the spaces via insulated ductwork. Currently the three air handlers supplying outside air are not working due to the chilled water coils having frozen during a freeze this last winter. According to management repairs are being scheduled.
Individual fan coil units serve each apartment. Air is supplied directly from the top of the unit. Outside air is supplied via three AHU’s that supply air to the corridors above.

### 4.6 Electrical Systems

Power is provided to the facility via a 480/277V pad mounted transformer located in the mechanical service yard on the east side of the building. That transformer is served from a power pole located along the northeast property line. The current service is rated at 2000 amps of which about half is required to serve the building.

The main switchgear is original. While it currently remains serviceable it is at the end of its useful life and parts for the gear by this manufacturer are increasingly hard to get and are very expensive. The automatic transfer switch for the generator is also original and needs to be replaced. However, the generator itself was installed in 2009. The generator is sized to operate one elevator, emergency lighting, and life safety systems. According to management a unit that is capable of powering the entire facility should be considered. Power outages that extend for days during major storm events make for difficult times for the elderly occupants of the facility.

Tenant units are served with local 12 circuit panels. These panels are not capable of accepting code required breakers in the event any remodel work is done on the facility and should be scheduled for replacement. Grounding and bonding of the electrical wiring and components is problematic. GFCI outlets were missing in the kitchens of the units that were inspected. This is a life safety issue and a code violation.
The GE switchgear is outdated and should be replaced due to cost of parts. Individual panels at each unit provide local distribution in the apartment.

4.7 Lighting Systems – Light fixtures for the first floor common areas and admin areas were replaced in 1998 in order to upgrade to emergency lighting requirements. These same upgrades were made in the hall lighting on all the upper floors. Interior lighting systems are standard low cost residential fixtures that are generally in fair condition.

Exterior systems consist of high pressure sodium fixtures mounted on 20 foot tall poles for lighting the parking lots. Smaller scale decorative fixtures illuminate the recreational areas and standard wall packs are used at the secondary entrances. The main entrance canopy is lighted with surface mounted can type fixtures. Overall nighttime lighting is adequate.
4.8 Vertical Transportation – The facility is served by two seven stop hydraulic elevators rated at 150fpm and 3000 pounds capacity. The equipment is original and is in need up updates however the hydraulic pumping equipment was replaced on Unit B In 2016. Unit B has a rear opening at the first floor inside the mechanical room.

Elevator cabs are in good condition but the door units need replacement. The original hydraulic pumping equipment on Car A needs to be replaced.

5.0 SITE & EXTERIOR IMPROVEMENTS

5.1 Topography – The 3.6 acre site varies approximately one foot in elevation. The land generally trends to the southeast on the Telephone Road side and to the northwest on the Oakhill Drive side. Accordingly the drainage for the site is divided into two areas.

5.2 Storm Water Drainage – Two underground systems drain the property. The area to the east of the building is system A, and the area north of the building is system B. System A drains to a manhole in the west ROW of Telephone Road and System B drains to a manhole in the east ROW of Oakhill Drive. Both systems are constructed of reinforced concrete pipe until they enter the building when they convert to cast iron for the roof drain system. The systems function reasonably well but need repairs and cleaning to perform as designed. See the report by TDT Plumbing in Appendix F.
5.3 Ingress/Egress – Access to the facility is from Telephone Road and on the east and Oakhill Drive on the west. The west entrance is for tenants and employees only. A gate separates the public parking from private at the northeast corner of the east tower. Access is good for private, commercial, and emergency vehicles.

5.4 Paving/Curbing/Parking – The primary paving material is concrete. Portions of the paving were replaced in 1995 primarily in the public area to the south of the east tower and the area at the service entrance. Sometime later the remainder of the parking areas must have been repaved in concrete. Currently the paving is in good condition needing only repairs where it is cracked, and in the immediate area of the catch basin for the storm drains.
5.5 Flatwork – Sidewalks, ramps, and building approaches are generally in good condition. Transitions between levels are correctly sloped or a proper ramp is installed.

Many interior walkways are uneven or damaged. Multiple tripping hazards exist.
Concrete finish at the main entrance is in good condition.

5.6 Landscape & Appurtenances – Exterior spaces at the facility are spacious and well maintained. The trees are generally mature and provide good shade. Outdoor seating is available and appears to be installed in a safe manner. A dog park is provided on the south side of the property.

Exterior seating areas are well kept and shady.
The dog park to the south of the main entrance is inviting for owners and pets.
5.7 Recreational Facilities – There are no recreational facilities for outdoor games but there is an outdoor seating and BBQ area. Indoors there is a community room for arts and crafts and a TV viewing area.

There is no outdoor game area but the BBQ patio is well appointed and shady.

An interior assembly area provides space for arts & crafts.

5.8 Waste Management – Interior rubbish is collected via a trash chute located in the main lobby on each floor. It is likely this chute will have to be upgraded with additional sprinklers. Trash drops to a compactor in the mechanical room and then carried to dumpsters in the driveway.

Rubbish chute is located on each floor in the elevator lobby.

Trash is removed from the main trash room to dumpsters for removal from the site.
5.9 **Special Utility Systems** – Cable TV and internet are the only components that may be construed as special utilities. Both are supplied and managed by facility management.

5.10 **Site Lighting** – Lighting for parking areas is provided via pole mounted double fixture light fixtures. These fixtures will not comply with current code requirements for light containment and will have to be replaced if the facility is upgraded.

### 6.0 CODE COMPLIANCE

6.1 **Accessibility (ADA, TAS, UFAS)** – The PCA includes an analysis of compliance with TDHCA’s accessibility requirements pursuant to Chapter 1, Subchapter B and Section 11.101(b)(8) and identify the specific items in the scope of work and costs needed to ensure the Development will meet these requirements upon rehabilitation. Accessibility is generally good for the entire facility. It is reported that there are 28 total accessible apartments.

6.2 **Fire Department** – Fire department access to the facility is good. Fire lanes are marked and the 911 boxes are in place. No upgrades are anticipated.

6.3 **Building Code** – The City of Houston functions under the 2012 International Building Code (With Houston Amendments) and the 2015 International Energy Conservation Code (With Houston Amendments). For normal updates or modifications the property would be subject to the code in force as of the date of the current Certificate of Occupancy, 1996. More significant or major renovations would require that all such changes be executed under the now prevailing IBC rules.

6.4 **Zoning** – There are no zoning requirements for the City of Houston.

### 7.0 REFERENCES

7.1 **Interviews**

<table>
<thead>
<tr>
<th>Person Interviewed</th>
<th>Position or Relationship to Property</th>
<th>Interview Date</th>
<th>Content of Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denise Coy</td>
<td>Property Manager, Tarantino Property Management</td>
<td>15May18</td>
<td>General discussion of operations &amp; maintenance, type of construction, functional deficiencies.</td>
</tr>
<tr>
<td>Ernesto</td>
<td>Maintenance Manager</td>
<td>18Apr18</td>
<td>Maintenance issues, problem areas, construction materials and type.</td>
</tr>
</tbody>
</table>

7.2 **Agencies and Authorities Having Jurisdiction**

- City of Houston Planning Commission
- City of Houston Permitting Division – Multi-Family Department
- City of Houston Fire Marshal
- City of Houston Department of Public Works, Habitation Inspection Section
7.3 Available Documents Reviewed

2012 International Building Code (With City of Houston Amendments)
2015 International Energy Conservation Code (With City of Houston Amendments)
6000 Telephone Road Modernization, Nov 1995, for City of Houston Housing &
Community Development. Molina Assoc. & Moseley Assoc. Architects.
Exterior Wall Restoration Project, Dec 2002, for Housing Authority of the City of
Houston. Mactec Engineering & Consulting, Engineers.
Physical Needs Assessment, 25Mar05, for Housing Authority of the City of Houston.
EMG Corp.
Physical Needs Assessment, 02Jul15, for Houston Authority of the City of Houston. EMG
Corp.

8.0 CERTIFICATION

The purpose for which this report shall be used shall be limited to the use as stated in the
contract between the client and PDG, and was performed in the accordance with the findings in
PDG’s site inspection.

The PCA was performed at the Client’s request using methods and procedures consistent with
good commercial and customary practice in general compliance with the standards set forth by
Condition Assessment Process and the additional requirements of Texas Department of
Housing and Community Affairs (TDHCA) 2019 Real Estate Analysis Rules – Property Condition
Assessment Guidelines, Section §11.306. In addition, PDG’s reference to the Client follows the
ASTM guide’s definition of User, whereas, the party that retains PDG for the preparation of a
baseline PCA of the subject property. A user may include, without limitation, a purchaser,
potential tenant, owner, existing or potential mortgagee, lender, or property manager of the
subject property.

This report is exclusively for the use and benefit of the Client identified on the first page of this
report. The purpose for which this report shall be used shall be limited to the use as stated in
the contract between the client and PDG. Texas Department of Housing and Community Affairs
may rely on this report.

PDG will not materially benefit from the Development in any other way than receiving a fee for
performing the PCA and that the fee is in no way contingent upon the outcome of the
assessment. PDG has read and understands the requirements outlined in Section 11.306 of the

All persons who have a property interest in this report hereby acknowledge that the
Department may publish the full report on the Department’s website, release the report in
response to a request for public information and make other use of the report authorized by
law.
The opinions PDG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. PDG assumes no responsibility or liability for the accuracy of information contained in this report which has been obtained from the Client or the Client’s representatives, from other interested parties, or from the public domain. The conclusions presented represent PDG’s professional judgment based on information obtained during the course of this assignment. PDG’s evaluations, analyses and opinions are not representations regarding either the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions and test data provided by the Client or their representative have been assumed to be correct and complete. The conclusions presented are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

PDG certifies that PDG has no undisclosed interest in the subject property, PDG’s relationship with the Client is at arms-length, and that PDG’s employment and compensation are not contingent upon the findings or estimated costs to remedy any deficiencies due to deferred maintenance and any noted component or system replacements.

PDG’s PCA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and the performance of a subject property’s building systems. Preparation of a PCA in accordance with ASTM E2018- 08 and THDCA’s 2019 Real Estate Analysis Rules (10 T.A.C. 11.306) – Property Condition Assessment Guidelines is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system may not be initially observed. This PCA was prepared recognizing the inherent subjective nature of PDG’s opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that PDG’s suggested remedy may be determined under time constraints, formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the physical deficiency. PDG’s opinions are generally formed without detailed knowledge from individuals familiar with the component’s or system’s performance.

Respectfully Submitted,

Dan M. Sharp, AIA
Senior Project Manager
9.0 APPENDICES

Appendix A: List of Commonly Used Terms and Acronyms
Appendix B: Structural Physical Condition Assessment
Ensight Structural Engineering
Appendix C: Mechanical Electrical & Plumbing Facility Assessment
Enhanced Professional Services
Appendix D: Vertical Conveyance Inspection
Persohn - Hahn
Appendix E: Civil Engineering & Site Planning
Omega Engineers
Appendix F: Underground Piping Infrastructure Condition
Texas Drain Technology
Appendix G: City of Houston Certificate of Occupancy
Appendix H: Roofing & Building Envelope Inspection
Royal American Services
Appendix I: Accessibility Review
Appendix J: Renovation Cost Estimate
APPENDIX A

LIST OF COMMONLY USED TERMS & ACRONYMS
LIST OF COMMONLY USED ACRONYMS OR TERMS OF REFERENCE: This report may use abbreviations to describe various construction, engineering, sitework, and building systems or components. Abbreviations often used are defined in the table below.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA</td>
<td>Americans With Disabilities Act</td>
</tr>
<tr>
<td>AFCI</td>
<td>Arc Fault Circuit Interrupter</td>
</tr>
<tr>
<td>AHJ</td>
<td>Authority Having Jurisdiction (Building Official)</td>
</tr>
<tr>
<td>AHU</td>
<td>Air Handling Unit</td>
</tr>
<tr>
<td>ASHRAE</td>
<td>American Society of Heating Refrigeration Airconditioning Engineers</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society For Testing and Materials</td>
</tr>
<tr>
<td>BIT</td>
<td>Bitumen</td>
</tr>
<tr>
<td>BOMA</td>
<td>Building Owners &amp; Managers Association</td>
</tr>
<tr>
<td>BUR</td>
<td>Built Up Roof</td>
</tr>
<tr>
<td>BTU</td>
<td>British Thermal Unit</td>
</tr>
<tr>
<td>DWV</td>
<td>Drainage Waste &amp; Vent</td>
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<tr>
<td>EIFS</td>
<td>Exterior Insulation and Finish System</td>
</tr>
<tr>
<td>EMF</td>
<td>Electro Magnetic Field</td>
</tr>
<tr>
<td>EMS</td>
<td>Emergency Management System</td>
</tr>
<tr>
<td>EUL</td>
<td>Estimated Useful Life</td>
</tr>
<tr>
<td>EPDM</td>
<td>Ethylene Propylene Diene Monomer (Type of single ply membrane roof)</td>
</tr>
<tr>
<td>FIRMS</td>
<td>Federal Insurance Rate Maps</td>
</tr>
<tr>
<td>FCU</td>
<td>Fan Coil Unit</td>
</tr>
<tr>
<td>FRT</td>
<td>Fire Retardant Treated</td>
</tr>
<tr>
<td>FM</td>
<td>Factory Mutual</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Administration</td>
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<tr>
<td>GFICI</td>
<td>Ground Fault Circuit Interrupter</td>
</tr>
<tr>
<td>GPD</td>
<td>Gallons Per Day</td>
</tr>
<tr>
<td>GSF</td>
<td>Gross Square Foot</td>
</tr>
<tr>
<td>GWB</td>
<td>Gypsum Wall Board</td>
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<td>HDCAP</td>
<td>Handicapped</td>
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<tr>
<td>HVAC</td>
<td>Heating Ventilation &amp; Air Conditioning</td>
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<tr>
<td>IAQ</td>
<td>Indoor Air Quality</td>
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<tr>
<td>IBC</td>
<td>International Building Code</td>
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<tr>
<td>IFC</td>
<td>International Fire Code</td>
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<tr>
<td>KWH</td>
<td>Kilowatt Hour</td>
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<tr>
<td>MCC</td>
<td>Motor Control Center</td>
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<tr>
<td>MDP</td>
<td>Main Distribution Panel</td>
</tr>
<tr>
<td>MEP</td>
<td>Mechanical, Electrical, Plumbing</td>
</tr>
<tr>
<td>NRSF</td>
<td>Net Rentable Square Foot</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>PTAC</td>
<td>Packaged Terminal Air Conditioner</td>
</tr>
<tr>
<td>PCA</td>
<td>Property Condition Assessment</td>
</tr>
<tr>
<td>PCR</td>
<td>Property Condition Report</td>
</tr>
<tr>
<td>PML</td>
<td>Probable Maximum Loss</td>
</tr>
<tr>
<td>RTU</td>
<td>Roof Top (Air Conditioning) Unit</td>
</tr>
<tr>
<td>RUL</td>
<td>Remaining Life</td>
</tr>
<tr>
<td>SBS</td>
<td>Styrene Butadiene Styrene Roof Membrane</td>
</tr>
<tr>
<td>TAS</td>
<td>Texas Accessibility Standards</td>
</tr>
<tr>
<td>TDLR</td>
<td>Texas Department of Licensing &amp; Regulation</td>
</tr>
<tr>
<td>TPO</td>
<td>Thermoplastic Polyolefin Roof Membrane</td>
</tr>
<tr>
<td>VAV</td>
<td>Variable Air Volume</td>
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<tr>
<td>VFD</td>
<td>Variable Frequency Drive</td>
</tr>
<tr>
<td>VRV</td>
<td>Variable Refrigerant Volume</td>
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<tr>
<td>XFMR</td>
<td>Transformer</td>
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</tbody>
</table>
APPENDIX B

STRUCTURAL PHYSICAL CONDITION ASSESSMENT
STRUCTURAL PHYSICAL CONDITION ASSESSMENT

For Structures Located at
6000 Telephone Road
Houston, Texas 77087

Prepared For
PDG Architects

Prepared By:
ensight
4800 Sugar Grove Blvd, Suite 300
Stafford, Texas 77477
713.621.0725
F-9893

ESE Project #
S18019

May 11, 2018
1.0 INTRODUCTION

As requested, we have performed a structural Physical Condition Assessment (PCA) of the structure located at 6000 Telephone Road, Houston, Texas 77087. The purpose of this review was to generally observe the structures with particular attention to the visible structural elements for evidence of apparent structural distress or deterioration. A limited set of original construction drawings and renovation drawings were made available to us at the time of our visit. These drawings did not include original structural drawings and received a cursory review to become familiar with the general intent of the design only. A complete check of the structural design and/or drawings was not performed, and was not included in our scope of work.

2.0 BUILDING INFORMATION

This review includes a 7 story residential apartment building with a total of 200 units originally built in 1975. See Figure 1 for site overview and Figure 2 for typical floor plan.

Figure 1 - Site Overview
The primary structure consists of an approximately 2" thick concrete topping slab over 6" deep x 3' - 3' wide precast hollow core planks bearing on concrete masonry (CMU) loadbearing walls located between units. See Figure 3. The loadbearing CMU walls bear on concrete transfer beams at the west tower. These transfer beams are supported by concrete columns to the foundation. See Figure 4. The first floor structure appears to consist of a conventional concrete slab-on-grade. The foundation was not able to be determined at the time of our visit.
This structure appears to be in original as-built condition with no substantial structural modifications or additions. There was a significant change to the façade in 1995 as metal panel systems were installed over the existing brick masonry. All of the structural elements we observed appeared to be consistent with the original construction drawings.
3.0 GENERAL CONDITION

Interior finish materials generally prevented the structural elements from being readily visible in many areas of the building. As a result, interior observations of the structure were generally limited to the spaces that were unfinished. We also observed several interior rooms that were not occupied by tenants. This allowed a representative review of most of the primary structural members. The exterior of the buildings were examined from the ground and from the roof for obvious defects or distress in the outer finishes that might be indicative of structural problems or concerns.

These buildings generally appear to be in sound structural condition. We did not observe obvious signs of significant foundation movement or substantial areas of distress in the interior or exterior finish materials. The roof framing we observed appeared to be consistent with standard framing practices and did not exhibit signs of significant movement or distress.

4.0 SITE OBSERVATIONS, GENERAL COMMENTS, & RECOMMENDATIONS

4.1 CMU control joints- We observed numerous locations where slight cracks or separation of joints occurred at corners, doorways, and wall transitions. See figure 5. These conditions appear to be the result of a lack of control joints in the original construction. The control joints are intended to relieve the internal stresses that tend to accumulate at these locations within concrete masonry walls. None of the conditions we observed appear to affect the serviceability or functionality of the building. Repairs would only be warranted for aesthetic reasons.
4.2 CMU cracks – We observed several locations within the stairwells where vertical cracks in the loadbearing masonry were present. See figure 6. All of the cracks we observed were located at the intersection of areas of higher load and lower loading such as stair landings. This cracking is likely the result of a lack of concrete masonry bond beams below areas of high loading such as the stair landing elevations. Bond beams are intended to distribute loading evenly to the wall below and mitigate cracking of this type. None of the conditions we observed appear to affect the serviceability or functionality of the building at this point. Repairs would be warranted to prevent further separation as well as for aesthetic reasons.

![Figure 6](image-url)
4.3 Metal skin attachment – The metal skin that was added as part of the renovation does not appear to have been installed per the documents. The renovation documents specify that the primary clips be fastened to the steel lintel angles and the concrete beams. This method transfers the wind loading directly into the structural framing. The actual construction we observed from one area where panels were removed revealed that the clips were installed directly to the brick masonry façade. See figure 7. This condition creates several concerns. First, the fastening method does not have the capacity to transfer the code required wind forces from the panel system to the brick façade. The allowable tension capacity of the fasteners installed in this manner is much less than what would be required by code. Second and most important, the brick masonry is not capable of transferring the forces from the clips into the primary structural framing. The brick likely has light-gage brick ties that are attached to the structure at very close spacings and are only designed to transfer minimal load. The spacing of the metal clips are approximately 8 ft on center and would have much more load than the brick ties can accommodate. We recommend this condition be evaluated and modified to meet the wind loading requirements.
The horizontal band of vertical panels at the roof line appears to be warped or slightly askew. See figure 8. This is likely due to failure of individual fasteners or buckling due to compression of the panels. This condition has likely compromised the panels for wind resistance and waterproofing capacity. We recommend this condition be evaluated and repaired.

![Figure 8](image)

4.4 Roof structure not securely attached – The precast panels at the roof hatch bear on loose steel lintels sometimes referred to as trimmer beams. See figure 9. No structural attachment is visible as this appears to be a gravity bearing connection only. It also appears that there is not a topping slab at the roof. We do not have specific information or section properties of the precast planks used, but based on common properties, the self-weight of the planks would not be sufficient to resist wind uplift forces of the current design code. If significant modifications are anticipated for this building, this condition may need to be evaluated and modified to comply with current building code requirements.
4.5 Roof hatch not structurally attached – The roof hatch on the southwest end of the building appears to rest on built-up wood members that span the entire opening. See figure 10. The hatch does not appear to be attached to the concrete in such a way as to resist building code-required uplift loading. We recommend this condition be evaluated and modifications made to secure the hatches.

4.6 Roof hatches at edge of building – The roof hatches are located adjacent to the edge of the buildings and do not have adequate safety railing. See figure 11. Since the hatches are less than 10 ft from the edge of the building, they must have adequate guardrails or safety tie-offs.
4.7 Low parapet with no tie-backs – The parapets at the edge of the roof are less than the required minimum height for fall protection. See figure 12. There also does not appear to be permanent tie-off points for personal safety lines. The building code does not require permanent tie-offs, but temporary system would need to be provided for any roof work or maintenance within 10 ft of the perimeter.

4.8 Water standing – Water was observed to be ponding on the north tower. See figure 13. The depth does not appear to be significant, but the presence of standing water could lead to roof leaks and should be repaired.
4.9 Corrosion of stair attachment at roof – The steel stair attachment to the roof at the south hatch shows signs of corrosion and deterioration. See figure 14. The attachment should be evaluated for capacity and repaired to eliminate corrosion and prevent further deterioration. The waterproofing in this area should also be evaluated to prevent further corrosion.
4.10 Handrails and guardrails at stairways not meeting code – All of the stair handrails and guardrails we observed did not appear to be in compliance with code required geometry. See figure 15. Building code requires guardrails to be 42 inches in height and intermediate rails to be spaces such that a 4 inch sphere cannot penetrate. Most of the guardrails are only approximately 36 inches in height and only have one intermediate rail.

![Figure 15](image)

4.11 Tile movement in hallway – We observed several locations where floor tiles had been replaced or where separation was evident in the hallways. See figure 16. These locations all appeared to align with joints in the precast hollowcore planks below. The amount of movement does not appear to be significant and we did not observe any signs of significant building movement or separation of other finishes at these locations. We do not believe this condition is a structural concern at this time.
4.12 A few minor slab-on-grade cracks were observed in the level 1 slab. See figure 17. These generally appear to have originated as shrinkage or temperature cracks. No excessive separation or differential displacement was observed. These cracks generally do not appear to be structurally significant and repairs do not appear to be warranted at this time.
5.0 CONCLUSIONS

In general, this building appears to be in sound structural condition, with some minor repair and/or maintenance work suggested. We did not observe any signs of significant corrosion or deterioration of the primary structural elements or obvious foundation movement. No cracking or other conditions in the concrete slabs or brick masonry were observed that are beyond what may be normally expected for structures of this type. The few items noted here, if addressed in a timely manner, should not have a significant adverse impact on the overall structural integrity of the buildings.

We do recommend several conditions be evaluated and modified to comply with current building codes for wind loading. We did not see any evidence of failure or believe the structure is in any form of immediate danger. These modifications would be to bring the building in compliance with maximum design wind loads for current building codes and mitigate potential damage from future weather events.

6.0 LIMITATIONS

This review is cursory in nature and is not intended to be comprehensive in scope. Conditions may exist that were not observed, reviewed or reported. Although no evidence was observed to indicate that other defects, deterioration, or areas of distress are present, it must be reiterated that this report is based primarily on observations made of the exterior of the building and the interior areas where the structure is not concealed by interior finishes. The responsibility of our firm is limited to reporting field observed conditions and providing general recommendations. No responsibility of our firm for verifying that indicated repairs or additional investigations have been performed shall be assumed or considered implied. The condition and future performance of the structure is not guaranteed or warranted by our firm.
APPENDIX C

MECHANICAL, ELECTRICAL, & PLUMBING
FACILITY ASSESSMENT
April 16, 2018

Enhanced Professional Services

Authored by:
Brian Bennick EMP, CxAP
### Executive Summary

The facility overall condition is fair considering its age however, there are many areas that will require significant upgrades to extend the life cycle of the facility for 30 years. Most of major mechanical, electrical and plumbing systems are in poor condition and require extensive repairs and/or replacement within the next 1 – 5 years. Many of the aforementioned systems are past their useful service life and availability of replacement parts will be difficult to acquire. Availability of essential replacement parts in the event of a catastrophic event could render critical systems inoperable for extended periods of time (weeks/months).

Specific equipment observations and findings from our site visit are further explained in the applicable sections within this report.

### 1 Facility Description

#### 1.1 General Information

- Facility Name: Telephone Road Elderly Apartments
- Address: 6000 Telephone Road
  Houston, TX 77087
- Property Manager: Tarantino Properties Inc.
- Facility Type: Elderly Apartments
- Year Opened: 1978
- Total Units: 200
- One Bedroom: 180
- Two Bedroom: 20
1.2.1 Facility Mechanical Systems

There are (6) main air handling units that provide conditioned air for the facility (locations and service noted in Table 1.2). Heating is supplied via electric duct heat coils. Outside air is supplied to the facility via three dedicated outside air handling units located on level one in each wing of the facility. Common areas are served via AHU – 1, 2 & 3. Exhaust air is provided via 13 – 10 HP exhaust fans and 12 – 7.5 HP exhaust fans in various state of operations. There are 26 vent hoods which appear to serve as the relief for kitchen and laundry exhaust.

The cooling and heating needs of each unit is provided by a chilled water FCU (Fan Coil Unit) with electric strip heating. The FCU’s are at the end of their useful life and should be upgraded with a new system. Each unit restroom contains an exhaust grill which we assume is connected to a common exhaust fan system located at the roof. We checked the pressure across (reading +.008 inh2o) the exhaust grill in Unit #616 and it indicated no exhaust was present.

The make-up air units (outside air) MA – 1, 2 & 3 all contained broken chilled water coils. According to the site maintenance staff all the coils froze during the last freeze in Houston. It is apparent a freeze protection sequence is not in place as the unit has a pre-heat coil which should activate and a chilled water valve that should have been opened so water could flow. Currently the Make-up air units are not operating thus outside air is not being provided for tenant needs additionally this creates a negative pressure condition in the facility. A negative pressure condition causes humidity and temperature issues which are conducive to mold growth and other potential pathogens.

Air Handling Unit – 2 & 3 are located adjacent to the main mechanical and electrical rooms their condition and style are consistent with the 1996 remodel timeline. The overall condition is fair however, they will require replacement within the next 5 years. The steel piping to AHU – 2 failed at some point and was repaired utilizing PVC piping. PVC piping is not typically utilized for chilled water systems as it becomes more brittle with colder temperatures and if subjected to physical damage might fail.

Chilled water piping system insulation is in poor condition and must be repaired or replaced to increase the efficiency of the system additionally, insulation assists in decreasing pipe corrosion due to pipe sweating.

Table 1.2 – Air Handling Unit Schedule

<table>
<thead>
<tr>
<th>Unit Number</th>
<th>Service</th>
<th>Location</th>
<th>Total CFM</th>
<th>Fan HP</th>
<th>Cooling Capacity (MBH)</th>
<th>Heating Capacity (MBH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU – 1</td>
<td>Common Areas Temperature Control</td>
<td>Assembly</td>
<td>3540</td>
<td>3</td>
<td>120</td>
<td>109.2</td>
</tr>
<tr>
<td>AHU – 2</td>
<td>Common Areas Temperature Control</td>
<td>Day rooms</td>
<td>6055</td>
<td>7.5</td>
<td>205</td>
<td>88.7</td>
</tr>
<tr>
<td>AHU – 3</td>
<td>Common Areas Temperature Control</td>
<td>Lobby</td>
<td>3540</td>
<td>3</td>
<td>120</td>
<td>122.6</td>
</tr>
<tr>
<td>MA – 1</td>
<td>Outside Air</td>
<td>North Wing</td>
<td>4800</td>
<td>5</td>
<td>344</td>
<td>204.8</td>
</tr>
<tr>
<td>MA – 2</td>
<td>Outside Air</td>
<td>East Wing</td>
<td>3500</td>
<td>3</td>
<td>251</td>
<td>150.2</td>
</tr>
<tr>
<td>MA – 3</td>
<td>Outside Air</td>
<td>South Wing</td>
<td>3500</td>
<td>3</td>
<td>251</td>
<td>150.2</td>
</tr>
<tr>
<td>FC – 3</td>
<td>Apartment</td>
<td>Apartment</td>
<td>440</td>
<td>n/a</td>
<td>10.3</td>
<td>13.6</td>
</tr>
<tr>
<td>FC – 4</td>
<td>Apartment</td>
<td>Apartment</td>
<td>360</td>
<td>n/a</td>
<td>8.5</td>
<td>6.83</td>
</tr>
<tr>
<td>FC – 5</td>
<td>Apartment</td>
<td>Apartment</td>
<td>850</td>
<td>n/a</td>
<td>22.3</td>
<td>17.07</td>
</tr>
<tr>
<td>FC – 6</td>
<td>Apartment</td>
<td>Apartment</td>
<td>840</td>
<td>n/a</td>
<td>24.5</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Data not available for FC – 1, FC – 2, FC – 3. n/a* Fan HP not available.
Inspection of the chillers indicated one bad compressor circuit on chiller #2 as CKT was locked out. We noted two chillers operating at the time of our visit the chillers indicated the following loads.

<table>
<thead>
<tr>
<th>Chiller</th>
<th>EWT</th>
<th>LWT</th>
<th>ΔT</th>
<th>% loaded</th>
<th>Comp. on</th>
<th>Circuits locked out</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH – 1</td>
<td>42.5°</td>
<td>39.3°</td>
<td>3.2°ΔT</td>
<td>41%</td>
<td>Comp A</td>
<td>None</td>
</tr>
<tr>
<td>CH – 2</td>
<td>46.7°</td>
<td>41.7°</td>
<td>5°ΔT</td>
<td>23%</td>
<td>Comp B</td>
<td>Circuit #1</td>
</tr>
</tbody>
</table>

The above loads indicate the chillers operation is not at peak efficiency. The chillers need replacement the coils are damaged, insulation is missing and there are multiple areas of corrosion. It appears as the chilled water does not have an adequate water treatment system. Without adequate water treatment the system piping will corrode prematurely. The chilled water pumps are showing signs of wear as well. The overall system should be replaced within the next 5 years.
1.2.2  **Building Electrical Systems**

Review of the current electrical distribution system revealed the main electrical gear and panel boards are original to the facility and are now at the end of their useful life. Obtaining replacement parts will become more difficult in the coming years. We recommend upgrading the electrical service with new equipment to meet current building codes. The generator however was installed in 2009 and will be viable for the next 20 +/- years if properly maintained. The Emergency Transfer switch should be replaced as it is also past its useful life and parts will be more difficult to locate.

Each tenant unit is served via its own 24 circuit General Electric branch panel. The unit electrical panel will accept the current style of breakers however, they do not contain Arc-fault breakers which are currently code required. During our investigation of a vacant unit (#322) it was discovered the kitchen did not contain GFCI outlets by the kitchen sink. GFCI breakers are required by code and should be installed in all wet areas.
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Space</th>
<th>Wireway</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU – 2</td>
<td>AHU – 2A Heating Coil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU – 3</td>
<td>Unknown off</td>
<td></td>
<td>800A Breaker</td>
</tr>
<tr>
<td>CH Pump – 6</td>
<td>CH Pump – 1</td>
<td></td>
<td>CH – 1</td>
</tr>
<tr>
<td>Vent Fan – 7</td>
<td>CH Pump – 3</td>
<td></td>
<td>CH – 2</td>
</tr>
<tr>
<td>AHU – 3</td>
<td>Heating Coil</td>
<td></td>
<td>XFR Switch</td>
</tr>
<tr>
<td>AHU – 3</td>
<td>Freight ELE</td>
<td></td>
<td>Space</td>
</tr>
<tr>
<td>AHU – 3</td>
<td>CH Pump – 2</td>
<td>112.5 KVA</td>
<td>CH – 3</td>
</tr>
</tbody>
</table>

GE
2000 Amp Supply
2000 Amp Sections
460V/3/60 3 – Wire
Style: AV – 2
Job #: 87526
Plant H
1.2.3 **Building Plumbing Systems**

The water supply for the facility is provided by the City of Houston Public Utilities Department. Domestic hot water is provided via hot water boilers and an expansion tank located in the level one main mechanical room. During our review we discovered the boiler exhaust flue piping was separated at the elbow above the expansion tank. This condition can allow carbon monoxide infiltration into the facilities HVAC system as AHU – 1 & 2 are in a space adjacent to the boilers. This condition was pointed out to the site maintenance staff as it presents a significant life safety issue.

During our review of the boilers they were observed providing 127.4° F supply water which is lower than the recommended minimum 140° F domestic water heater temperature for control of Legionnaires Disease according to OSHA’s recommendations. The hot water system was missing pipe insulation which is a contributing factor to lower supply water temperatures. Facility hot water piping was not visible due lack of access to pipe chases.

It should be noted Elderly persons are exceptionally susceptible to Legionnaires Disease thus the need for a vigilant domestic hot water temperature control and legionella monitoring program. We suggest ownership review OSHA website as it pertains to Legionnaires Disease.

See below for OSHA recommended practices website excerpts:


Properly maintaining a hot-water system includes being aware of the following.

**Conditions that promote growth:**

- **Scale and sediment** supply the environment needed for growth of Legionnaires' disease bacteria (LDB) and other microorganisms.

- **Dead legs** and non-recirculated plumbing lines that allow hot water to stagnate also provide areas for growth of the organism.

- **Temperatures** maintained below 60°C (140°F) encourage growth of LDB and other microorganisms.

**Temperature:**

- Maintain domestic water heaters at 60°C (140°F) and water delivered at the faucet at a minimum of 50°C (122°F). Where these temperatures cannot be maintained, control LDB growth with a safe and effective alternative method. Also see [What to consider in the system design](https://www.osha.gov/dts/osta/otm/legionnaires/hotwater.html#alternative).

- Proper insulation of hot-water lines and heat tracing of lines can help maintain distribution and delivery temperatures at 50°C (122°F).

- If potential for scalding exists, employ appropriate fail-safe scald-protection.
It appears as the facility main water supply riser and branch piping are galvanized steel piping which has a typical life span of 30 +/- years. In buildings of this age it is common to find the piping with significant rust accumulations on the interior of the piping system thus causing restrictions in water flow and increasing the probability of water leaks. We recommend replacement of the domestic water system with either copper or a code acceptable plastic piping such as Uponor/PEX piping system.

Review of the sanitary drain piping vents indicates the drain waste and vent (DWV) system is constructed with PVC pipe materials. PVC piping materials have a 60 +/- year useful life if they are not exposed to ultraviolet rays. System condition could not be visually verified as there was no access to the plumbing risers.
2 APPENDIX

2.1.1 Roof Exhaust Fans
2.1.2 Typical Unit Layout
Unit 616 Outlet indicates open Neutral.

Unit 616 RR GFCI is old and should be replaced.

Unit 322 Kitchen did not have GFCI.

Unit 322 Kitchen Not GFCI Protection.
APPENDIX D

VERTICAL CONVEYANCE INSPECTION
May 3, 2018

PDG Architects
Mr. Dan M. Sharp, AIA
3100 Weslayan, Suite 200
Houston, Texas 77027

Subject: Elevator Due Diligence
6000 Telephone Road - Houston, Texas

Dear Mr. Sharp:

Based upon our site survey of the referenced subject on Thursday, April 26, 2018, following you will find information regarding the vertical transportation’s current condition and recommendations for the future.

This Building is a seven (7) level facility served by two (2) hydraulic passenger elevators. The original installation was performed by Esco Elevator in approximately 1978. In 1996, the controls, door operators and fixtures were modernized. In 2016, the hydraulic pumping unit was replaced on Car B.

The following information will identify the system characteristics, code items, and any necessary maintenance and repairs required:

1) System Characteristics:

Passenger Elevators

<table>
<thead>
<tr>
<th>Elevator Identification:</th>
<th>Passenger Nos. A and B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Manufacturer:</td>
<td>ESCO / Motion Control Engineering (MCE)</td>
</tr>
<tr>
<td>Speed / Capacity:</td>
<td>150 fpm / 3000 lbs.</td>
</tr>
<tr>
<td>Landings / Openings:</td>
<td>Elevator No. A: 7 / 7 in-line (1 thru 7)</td>
</tr>
<tr>
<td></td>
<td>Elevator No. B: 7 / 8, 7 in-line and 1 rear at B</td>
</tr>
<tr>
<td>Door Size:</td>
<td>Elevator Nos. A and B: 3’-6” x 7’-0”</td>
</tr>
<tr>
<td>Door Type:</td>
<td>Single-Speed, Side-Opening</td>
</tr>
<tr>
<td>Current Service Provider:</td>
<td>ESC</td>
</tr>
</tbody>
</table>
2) ASME / ADA Code Status:

All elevators meet current ASME A17.1 and ADA status based upon the installation date.

3) Recommended Upgrades:

For the two elevators, the current serviceability is not of concern. However, based upon age of the existing controls and door equipment, modernization is recommended within the next two to three years. Below, please review budget planning for these elevators:

**Elevator A:** $75,000 to $85,000  
**Elevator B:** $65,000 to $75,000

The difference in budget between the two elevators is based solely on the new hydraulic pumping unit installed on Elevator B in 2016.

For planning purposes, all budget cost are based upon current market value. The elevator industry labor increases 6% – 8% annually.

Modernization consists of all major components including main control system, master door operator, car and hall fixtures, cab interiors and associated wiring.

In addition to modernization cost, there are code related work by other trades (fire safety, electrical, HVAC and plumbing) required. These cost are not covered by elevator contractors and can vary based upon age of building. Recent projects have shown these cost to be budgeted 15% to 20% of elevator cost but, again, need to be verified by related trades.

4) Recommended Maintenance and Repairs:

The current condition of the elevator equipment is **average** based upon items reviewed during the visit.

The primary area of focus should be on routine cleaning of the machine rooms, hoist-ways, pits and door equipment of all elevators. Specific items to focus on at the time of survey include addressing hydraulic leaks in the pit and hydraulic pump unit of Elevator A.
The items noted in this section are typically covered under a full service agreement.

In the event modernization is deferred beyond the recommended 2 to 3 years, it is recommended upgrades to the hydraulic pumping unit (Elevator A). Estimated cost based on current market value for this work is noted below:

**Elevator A: $65,000 to $75,000**

Moving forward, continued management of a comprehensive maintenance program, typical of all major elevator manufactures, should remain in place to provide safe and efficient operation.

5) **Summary:**

In summary, considering the age of the elevator system, the units are in average operating condition. The equipment does appear to be safe and efficient and the annual safety inspections are current. Based upon this condition and information provided, it is recommended the current service provider maintain the equipment until the recommended modernization of the elevators occur. Serviceability and support of the equipment is not a concern for other service providers.

In closing, we appreciate the opportunity to provide our service at this facility. Upon review, should you have any additional questions and/or comments, please feel free to contact us at your convenience.

Respectfully,

*Will Bowden*

Will Bowden  
Vice President  
Persohn/Hahn Associates, Inc.

CC: File
APPENDIX E

CIVIL ENGINEERING & SITE PLANNING
The purpose of this report is to document the conditions observed and report the potential deficiencies noted. Comments are as follows:

1. Replat - A Replat is highly recommended for permitting purposes. Technically, according to City of Houston Planning, a Replat is not necessary if the building footprint(s) are not changed. However, the 2012 IBC code could raise some concerns that may affect the permitting process. Since this parcel is located on two platted sections, a new Plat would clear up property records.

2. The concrete paving throughout the complex appears to be in good condition. No pavement repairs are necessary at this time other than minor crack and joint sealant repair. Drainage appears to be adequate around the property. Sidewalks and driveways are in also in good condition. The project site is located in unshaded Zone X on the attached FEMA-FIRMette map, an area of minimal flood hazard.
Observation Report  (cont'd.)

Project:  6000 Telephone Road Civil Site Assessment
Location: 6000 Telephone Road, Houston, TX  Date: 05/01/18
Subject: Civil Site Assessment & Report
Observation Report (cont'd.)

Project: 6000 Telephone Road Civil Site Assessment
Location: 6000 Telephone Road, Houston, TX  Date: 05/01/18
Subject: Civil Site Assessment & Report
Observation Report (cont'd.)

Project: 6000 Telephone Road Civil Site Assessment
Location: 6000 Telephone Road, Houston, TX Date: 05/01/18
Subject: Civil Site Assessment & Report
This map complies with FEMA’s standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA’s base map accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/1/2018 at 4:03:23 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.
APPENDIX F

UNDERGROUND PIPING INFRASTRUCTURE CONDITION
Two site mobilizations were made to reference property for Video Inspection and assessment of designated Sanitary Sewer system serving the apartment building(s). The sanitary sewer system investigated consist of main trunk line, and main tie-in lines below the slab of respective building(s), and main exit yard line.

**General Observations:**

- The 6000 Telephone Rd. Apartments consist of two (2) connected seven story buildings, (west wing), has 10 stacks of apartment units, and the second building, (east wing), has 6 stacks of apartment units. There is one central sanitary sewer system that serves both building wings, and is cast iron pipe. The sanitary sewer system consist of a total of 6, 4 inch clean-outs and a sanitary sewer manhole. Clean-outs have a depth range of 30 inches to 36 inches, and sanitary sewer manhole has an invert depth of 48 inches.

- The cast iron piping system has moderate to heavy tuberculation throughout the sanitary sewer system, and this is not uncommon for a system of this age.
- Video visual quality is compromised to some extent because of the constant flow of waste effluent during the inspection, therefore, some segments of pipe are not seen.
- On the pipe segments that are visible, there are no visual structural deficiencies observed.
- Maintenance staff indicated there are no known incidents of blockages or back-ups occurring.

**General Recommendation:**

- Schedule to have sanitary sewer system hydro-jet cleaned as soon as practical.
- Monitor operational condition of sanitary sewer system for any incidents of blockages / back-ups.
- Schedule yearly video inspections to insure sanitary sewer is not developing any structural / performance deficiencies.

Please refer to:

*Video Clips for additional information*

Prepared by: Vic Caso

713.697.2088
vcaso@tdtpiping.com
Two site mobilizations were made to reference property for Video Inspection and assessment of designated Storm Sewer systems serving the apartment complex property. The storm sewer systems consist of storm water drainage inlet boxes (in parking lot and court yard), and reinforced concrete pipes in court yard and parking lot.

**General observations:** The 6000 Telephone Rd. Apartments consist of two (2) connected seven story buildings, west wing has 10 stacks of apartment units, and the second building, (east wing), has 6 stacks of apartment units. There are two separate storm drain systems on the property, one that serves the perimeter of the buildings, (identified as system A) and the second storm drain system that serves the parking lot, (identified as system B). The storm drain system along the perimeter of the building’s consist of six 30 x 30 inch concrete inlet drainage boxes with cast iron grates. The depth range for the inlet boxes is between 20 to 60 inches below grade. The storm sewer pipes are reinforced concrete pipe and range from 6 inches to 18 inches internal diameter. This storm drain system has two roof drain leaders (one on front end of the east wing, and the second on back end of the east wing) that connect to the storm drain system. Roof drains accessed via clean-outs identified as Clean-out 1 and Clean-out 2. Please refer to site plan.

**General Legend for piping, inlet boxes, and clean-outs:** Note: Please refer to property site diagram; blue represent storm sewer pipes, red inlet boxes / clean-outs and green manhole outlets Specific Observations: (Please refer to site plan and video clips)

- **Initial site mobilization made on April 19, 2018.** Crew familiarized themselves with the property and storm sewer system. They began the video inspection of the storm sewer system at catch basin (inlet) identified as CB#1, and were able to view downstream approximately 56 feet. They then went to CB#2, and viewed upstream towards CB#1. In total they viewed approximately 167 linear feet of 18 inch I.D. reinforced concrete pipe (RCP). This segment of storm sewer RCP has light to moderate debris, and pipe segment is in good condition. Crew then viewed downstream from CB#2 towards CB#3. Video inspection continued to approximately 100 feet downstream, and a significant pipe deflection prevented the camera to go beyond that point. Crew then went to CB#3, and pushed camera upstream towards CB#2, and at approximately 11 feet upstream from CB#3, came across the pipe deflection previously seen. This segment of pipe requires a point repair to prevent further pipe deterioration. In total they viewed approximately 111 linear feet of 18 inch I.D. RCP. Crew continued with video inspection from CB#3, and went downstream towards CB#4. From CB#3 to approximately 125 feet downstream, the RCP is in good condition. At approximately 130 feet, there is a minor joint separation / crack. Recommend a point repair (Cured-In-Place Pipe Lining). In total approximately 140 feet of 18 inch RCP was viewed.

Crew went to clean-out #1, and video inspected upstream and downstream from the 6 inch I.D. clean-out. At approximately 21 feet upstream, the lateral RCP goes underneath the building and 90’s up and transitions to cast iron pipe. This segment of RCP is in good condition. Viewing downstream from clean-out, the lateral RCP takes a 90 degree turn, and runs along the building perimeter of the east wing. At approximately 43 to 45 feet downstream from clean-out, some minor
cracks, pipe deflection, are present. At approximately 46 feet, a drain pipe penetrates the 6 inch I.D. pipe, it appears to be a 4 inch I.D. RCP. At approximately 48, 55, 59, and 62 feet minor pipe deflections are observed. At approximately 64 feet, this 6 inch RCP ties into the 18 inch I.D. RCP that connects to CB#4. The 6 inch I.D. segment of pipe viewed, from approximately 43 feet to 64 feet is in poor condition. Replacement of this segment is recommended to prevent further pipe deterioration, and potential drain line clogs.

Crew continued to clean-out #2, and video inspected upstream and downstream from the 6 inch I.D. clean-out. The segment of 6 inch I.D. pipe going upstream from the clean-out is cast iron pipe, and is in good condition. At approximately 41 feet upstream from clean-out CIP goes underneath building and 90’s up. Viewing downstream from clean-out, pipe takes a 90 turn and runs along the building perimeter of the east wing. At approximately 15 feet downstream from clean-out, a major radial crack / separation is observed. At approximately 20 and 29 feet additional cracks / separations are observed. At approximately 34 feet a substantial radial crack / separation is visible. There are several pipe deflections present from approximately 47 to 53 feet downstream from clean-out. Camera was not able to navigate beyond 53 feet due to pipe deflections. The segment of 6 inch I.D. pipe downstream from clean-out is in poor condition. Replacement of this segment is recommended to prevent further pipe deterioration, and potential drain line clogs.

- **Second site mobilization made on April 20, 2018.** Crew began video inspection at CB#4 and viewed upstream, this is a 12 I.D. RCP pipe, at approximately 36 feet upstream, the 6 inch I.D. drain line coming from roof is observed penetrating into the 12 inch I.D. RCP, (on left side). At approximately 37 feet upstream, several chunks of concrete are seen. Camera is not able to navigate beyond this point. These chunks of concrete can be from the lateral 6 inch I.D. RCP coming from clean-out #1. Replacement of the 6 inch I.D. RCP (coming from clean-out #1) will remediate the tie-in to the 12 I.D. RCP pipe segment.

Crew continued with video inspection at CB#4 going downstream to CB#6, this is an 18 inch I.D. RCP, some light debris is encountered at approximately 26 feet downstream. At approximately 39 feet downstream, a small radial crack is observed. A total of 55 feet was viewed from CB#4 to CB#6. This segment of RCP is in good condition, except for the small radial crack / joint separation observed, recommend CIPP point repair.

Crew continued with video inspection on CB#5 (located at front right corner of west wing building). This is a 12 inch I.D. RCP Moderate to heavy debris present approximately 3 feet upstream from CB#5, and continues throughout pipe, however, debris does reduce to light as pipe continues upstream. Several minor joint separations are observed beginning at approximately 52 feet downstream, and continue to be present to approximately 95 feet downstream. Camera was not able to navigate beyond 99 feet downstream, and no other upstream access was available. Video inspection terminated at approximately 99 feet.

Crew continued with video inspection at CB #5 and viewed downstream towards CB#6. This is a 16 inch I.D. RCP and has light to moderate debris present throughout pipe. At approximately 15 and 85 feet downstream, minor joint separations are observed. A total of approximately 110 feet was viewed, and camera was not able to go beyond this point. Crew will now view from CB#6, and go upstream to towards CB#5 to view the rest of the 16 inch I.D. RCP. At about 5 feet upstream, moderate to light debris present in pipe, and continues throughout pipe. At approximately 93 feet upstream from CB#6, root infiltration is observed, this is indicative of a moderate joint separation. Video inspection continued up to approximately 100 feet upstream. Recommend either point repairs, or CIPP entire segment of 16 inch I.D. RCP to prevent further pipe deterioration and potential blockage.

Crew continued with video inspection at CB #6, and viewed downstream towards exit point #1. This is an 18 inch I.D. RCP pipe, and no evidence of any remarkable debris or problems on this
segment of pipe video inspected. A total of approximately 100 feet of 18 inch I.D. RCP was video inspected. Camera was not able to go beyond that point. This concludes the video inspection for Storm drain system A.

**Storm Sewer System B (on Northwest side of building) / serving the parking lot.**

The storm drain system along the perimeter of the parking lot consist of six 30 x 30 inch concrete Inlet drainage boxes with cast iron grates. The depth range for the inlet boxes is between 20 to 55 inches below grade. The storm sewer pipes range from 15 to 18 inch Internal Diameter reinforced concrete pipe.

Crew began video inspection at CB#1, and went downstream towards CB#2, and CB#3. This is a 15 inch I.D. RCP and appears to be in good condition, but has moderate to heavy debris throughout pipe segment. A total of 141 feet of 15 inch I.D. RCP was video inspected. Recommend hydro-jet cleaning this segment of pipe.

Crew relocated to CB#3, and continued with video inspection. This is an 18 inch I.D. RCP. Technician pushed video camera downstream for approximately 106 feet. Crew will relocate to CB#6, and continue with video inspection by going upstream towards CB#3. The segment of pipe video inspected thus far has a heavy presence debris, but appears to be in condition. Recommend hydro-jet cleaning this segment of pipe. Video inspection was continued by going upstream from CB#6, this segment of 18 inch I.D. RCP also has a heavy presence of debris, even the catch basin has a heavy presence of debris. A total of approximately 83 feet towards CB#3 was video inspected. The first 40 feet of video inspection is completely dark due to the presence of heavy debris. However, at about 42 feet downstream, one can see the pipe along with the debris. Recommend hydro-jet cleaning this entire run of 18 inch I.D. RCP, approximately 190 feet.

Crew continued video inspection at CB#6, by going upstream towards CB#4, there is a heavy presence of debris on this segment of line as well. At approximately 86 feet upstream, CB#5 is reached. Crew continued to go upstream, and was able to continue to approximately 158 feet upstream, and video went dark due to mud, etc. getting on the camera lens. Crew pulled camera and will continue with video inspection from CB#4. Recommend hydro-jet cleaning this segment of 18 inch I.D. RCP.

Crew relocated to CB#4, and continued with video inspection going downstream from CB#4 towards CB#5. This segment of 18 inch I.D. RCP has moderate to heavy debris. Camera lens is covered with mud at approximately 17 feet downstream from catch basin, thus blanking out video. Crew continued to push camera towards CB#5, approximately 73 feet downstream from CB#4. Recommend hydro-jet cleaning this segment of 18 inch I.D. RCP.

Crew continued with video inspection at CB#6, and went downstream to exit point #2. This segment of pipe is also an 18 inch I.D. RCP, and at approximately 40 feet downstream from CB#6 connects to the City of Houston main storm trunk line. The 18 inch I.D. RCP segment has a heavy build-up of debris. Recommend hydro-jet cleaning this segment of pipe.

This concludes the video inspection / assessment of the storm sewer drain system at 6000 Telephone Rd. Apartments.

**Summary / Recommendations:**

Storm sewer system A, overall, is in fair to good condition with the usual presence of debris, (gravel, silt, twigs, etc.) present. However, there are some specific pipe segments that are deteriorated and require point repairs / remediation or replacement to prevent further pipe deterioration, and / or water exfiltration, or potential drain line blockages.
The two 6 inch I.D. roof drain laterals (downstream from clean-outs) are in need of repair / replacement and should be addressed as soon as practical to avoid potential blockages.

**Clean-out #1:** The 6 inch I.D. segment of pipe viewed downstream from clean-out at approximately 43 feet to 64 feet is in poor condition. Replacement of this segment is recommended.

**Clean-out #2:** At approximately 15 feet downstream from clean-out, a major radial crack / separation is observed. At approximately 20 and 29 feet additional cracks / separations are observed. At approximately 34 feet a substantial radial crack / separation is visible. There are several pipe deflections present from approximately 47 to 53 feet downstream from clean-out. Camera was not able to navigate beyond 53 feet due to pipe deflections. The segment of 6 inch I.D. pipe downstream from clean-out is in poor condition. Replacement of this segment is recommended.

**The 16 inch I.D. RCP segment between CB#5 and CB#6:**

The 16 inch I.D. RCP segment between CB#5 and CB#6 at approximately 93 upstream from CB#6 has root infiltration. We recommend a point repair, CIPP to seal the joint separation / crack that allowed the root infiltration.

There are other segments of RCP in this system that should be monitored on yearly basis or especially after heavy thundershowers, and evidence of catch basins backing-up.

At the minimum, hydro-jet cleaning storm system A is recommended in the near future to prevent the cumulative accumulation of debris in storm sewer system.

Storm sewer system B is considered to be in poor operational condition due to the heavy presence of debris throughout the system. However, from a structural perspective the reinforced concrete pipe segments appear to be in good condition.

This storm drain system should be hydro-jet cleaned to remove the debris inside the pipes.

**Please refer to:**

- Property site Plan for storm system configuration / route
- Picture Sheets
- Video Clips for additional information

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vcaso@tdt plumbing.com
APPENDIX G

CITY OF HOUSTON
CERTIFICATE OF OCCUPANCY
CITY OF HOUSTON
CERTIFICATE OF OCCUPANCY

Owner or Occupant: CITY OF HOUSTON HOUSING AUTHORITY

This Certificate of Occupancy must be posted in a conspicuous place on the premises and authorizes the
Building(s) or Structure(s) to be occupied at:

<table>
<thead>
<tr>
<th>street no.</th>
<th>street name</th>
<th>suite</th>
<th>lot</th>
<th>block</th>
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<tbody>
<tr>
<td>6000</td>
<td>TELEPHONE RD</td>
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<th>occupancy use</th>
<th>occ. load</th>
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<td>7 STORY APT BLD-83 (SENIOR CITIZENS) - PHASE TWO</td>
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<th>type</th>
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<td>2</td>
<td>R1</td>
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The work listed hereon has been duly inspected and found to comply with all of the City of Houston
Building Code requirements for the occupancy group and use shown. This Certificate covers ONLY the
work described above; therefore other portions of the building may not have been inspected and
may not (and are not required to) comply with all portions of the City of Houston Building Code.
THIS CERTIFICATE DOES NOT CERTIFY COMPLIANCE WITH THE 'AMERICANS WITH DISABILITIES' ACT.

THIS CERTIFICATE ISSUED PENDING FINAL INSPECTION AT
COMPLETION OF PROJECT - XEE PJ 96047399

<table>
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<tr>
<th>Project Number:</th>
<th>97115769</th>
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Prepared by MEDINA

[Signature]

City of Houston

Premier, Building Official 11/25/97
APPENDIX H

ROOFING & BUILDING ENVELOPE INSPECTION
Project:
Houston Housing Authority
6000 telephone Rd
Houston, TX

C/O Mr. Dan Sharp
PDG Architects
3100 Weslayan # 200
Houston, Texas 77027

Roof and Panel investigation 6000 Telephone Rd Houston, TX.

Date: 4-4-18

1. Roof core # 1 Gravel over 3 mopped ply’s and 5” lightweight deck on 1” foam board on Structural Concrete deck panels.

2. Roof core # 2 Gravel over 3 mopped ply’s and 2” lightweight deck on 1” foam board on Structural Concrete deck panels.

3. Roof core # 3 Gravel over 3 mopped ply’s and 6” lightweight deck on 1” foam board on Structural Concrete deck panels.

4. Roof core # 4 Gravel over 3 mopped ply’s and 3” lightweight deck on 1” foam board on Structural Concrete deck panels.

5. Roof core #5 Modified roofing material placed over existing gravel roof (gravel not removed) over existing 3 ply’s and 3” lightweight on 1” foam board on structural concrete deck.

6. Roof core #6 Modified roofing material placed over existing gravel roof (gravel not removed) over existing 3 ply’s and 3” lightweight on 1” foam board on structural concrete deck.

7. Roof core # 7 Gravel over 3 mopped ply’s and 5” lightweight deck on 1” foam board on Structural Concrete deck panels.

8. Roof core # 7 Gravel over 3 mopped ply’s and 5” lightweight deck on 1” foam board on Structural Concrete deck panels.

Note! Original roof has a one inch styrofoam board placed on the structural concrete panel roof with a lightweight gyp-crete material poured and used to create slope to the roof drains and parapet scuppers. This was covered with 3 ea. mopped felt ply’s and then flooded with hot asphalt to accept gravel ballast.
Old existent roofing material vents.

Parapet sheet metal cap has been covered over with modified roofing.

View of interior of parapet and exposed metal cap flashing on exterior.

Exterior metal panel cover and clip attachment at original brick veneer.
Note! The existing roof has roofing material vents placed in the exiting gravel and Modified patched areas. This was done to vent moisture and relieve pressure from wind uplift. At one point the parapet interior walls were repaired and covered the top of the existing metal cap flashing.

The exterior panels are attached to the existing brick veneer with metal clips attached to the brick with screws. The clip is then used to attach the panels with metal panel screws for support. The area investigated show's that there was a clip at the base of the panel and the next clip at 6’+ from the base clip.
APPENDIX I

ACCESSIBILITY REVIEW
6000 Telephone Road Accessibility Assessment 04-13-18

6000 Telephone was built in 1978 and renovated in 1997. It is a 7 story multi-family building comprising of administrative office, lounge areas, community room, kitchen, laundry areas, and 200 apartment units under one roof. Accessible units are 8 one-bedrooms and 20 two-bedrooms.

In addition to the Accessible routes and common amenities, two sample Accessible units were reviewed for handicap accommodations. These were representative of the one-bedroom and two-bedroom Accessible units.

Site Arrival and Accessible route

1. Accessible route from bus stop to apartment is provided.

2. Accessible parking spaces are provided.

3. Curb ramps and access aisles and parking signage found to be in compliance with a few minor Issues.
4. Automatic doors at building entry and outside activity area for easy access and maneuvering for persons in wheelchair

5. Outside activities area provided with benches and picnic tables with wheelchair pull-up space

6. Seating area with adequate wheelchair turning space and pull-up space next to bench. Accessible ramp to seating area delineated with yellow striping between standard parking spaces.
1. Administrative window with compliant pull-up counter & roomy seating area

2. Mailboxes need designation for Accessible units at boxes below 48” reach.

3. Maneuvering space in front of last Vending machine may be difficult. Suggest swapping first and last and first machines.
4. Restrooms with sufficient space for wheelchair maneuverability at doorways, lavatory counters, stalls and toilet fixtures

5. Kitchen with pass-thru counters at Accessible heights
6. Pamphlet display should be lowered for Accessible side reach range at Community/Activity Room.

7. Laundry area and trash chute has front loading machines and maneuvering space. Door to trash room should be verified for maximum pull force.

8. Door signage are not consistent and do not accommodate visually impaired tenants with tactile letters and mounting placement.
9. Interior hallways have adequate room for two wheel chairs to pass. Handrail on one side for accommodating cane users. Elevators have buttons at appropriate height and wheel chair clearance.

10. Each of the three exit stairs has sufficient space for multiple wheelchairs in the areas of refuge.
1. Lowered cabinets and knee-space under sink to accommodate wheelchair user. Need 30” minimum work counter with knee-space next to stove. Kitchen has ample wheel chair maneuvering space.

2. Lowered closet shelves and rods are not consistent for wheelchair reach.
3. Accessible bathroom with grab bars at tub and toilet. Lavatory with insulated pipes and showers with controls towards the front, shower seat, and wheel chair maneuverability found to be in general compliance.
4. Lowered controls and alarm pull-strings at wheelchair height.

Sample Accessible Two-Bedrooms Unit #115

1. Lowered cabinets and knee-space at sink and work counter, sufficient maneuvering space in L-shape layout places kitchen in general compliance. Door to refrigerator need to swing open to the right
2. Accessible bathroom was found to be in compliance. Grab bars is provided at tub and toilet. Lavatory with insulated pipes and showers with controls towards the front, shower seat, and wheelchair has required maneuverability and clearances.

3. Visual strobes, smoke alarm, and alarm pull string in bedroom typical of all Accessible units.

4. Lowered closet shelves and rods not consistent for wheelchair reach.
5. Operational switches have been lowered for light switches. Thermostats need to be confirmed at Accessible heights.

**Conclusion**

These were the minor deficiencies noted:

1. Need 30” minimum workspace counters in 1 bedroom units kitchens.
2. Entry doors to apartment units’ maneuvering clearances are in question in some units.
3. Minor adjustments like lowering operational switches and closet shelves and rods for uniformity
4. Door signage need to be consistent and address the requirements of the visually impaired
5. Minor corrections of landings at top of curb ramp to meet TAS requirement
6. Number of Accessible parking space per units need to be verified to meet the latest UFAS and building codes.
APPENDIX J

RENOVATION COST ESTIMATE
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<th>Unit</th>
<th>Cost/Unit</th>
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**Notes:**
- Interior Demo & Renovation - Units
- Interior Demo & Renovation - Common Area
- Furniture Fixtures & Equipment
- Fire Alarm System Upgrades
- Trash Chute Upgrade