FOUNDATION FEASIBILITY REPORT FOR FIRE DAMAGED STRUCTURES

GENERAL INFORMATION

Existing foundations in fire damaged buildings and structures require a feasibility review by the Community Development Department. This review only considers the durability and soundness of concrete foundations including slabs, footings, piles, and retaining walls based on the testing data described below.

Timber Piles may not be reused as a foundation system as per current County of Los Angeles Building Code, Section 1810.3.2.4.

The feasibility review is the first of two mandatory steps before potentially reusing the foundation. The second step is the plan review process. The foundation shall meet minimum code requirements (current Los Angeles County Code, current California Building Code, and all other referenced codes and standards) during the plan review stage. The California-licensed design professional of record must provide details, calculations, and a narrative of repairs necessary for proof that the foundation meets minimum current code requirements for the plan review process. The foundation shall also meet minimum requirements and recommendations by a California licensed geotechnical engineer provided in a soils report or an update letter.

The submittal of the feasibility report or the City's acceptance of the report does not guarantee that the foundation may be reused for the construction of a new building or structure. The acceptance of the report allows for building plans to be submitted for plan review. During the plan review process, the foundation may be deemed unacceptable for reuse. The owner(s) shall be aware of all the risks in the form of additional costs or the failure to reuse the existing foundation.

FEASIBILITY REPORT

This guideline presents the minimum required information to be provided on the feasibility report prepared by a California-licensed civil engineer, or structural engineer. All testing shall follow specific codes and standards. Failure to do so will result in corrections needed before approval.

1. **Visual Inspection**: All locations of surface crazing, concrete cracking, surface erosion, spalling and discoloration of concrete shall be identified, photographed, and included in the report. Provide a description regarding the damage of the concrete observed including steel reinforcement and anchor bolts.

2. **Non-Destructive Testing**: Schmidt Hammer test (ASTM C805-18) shall be performed on the foundation to assess the in-place uniformity of concrete, to delineate variations in concrete quality throughout a structure, and to estimate in-place strength. The testing shall be performed at various locations of the foundation including areas with little to no fire damage and areas with damage. Provide a sketch of the foundation or retaining wall showing the locations where tests

have been taken from. The corresponding test results shall be clearly stated for each test. Based on the Schmidt Hammer testing results, destructive concrete testing per section 3 noted below shall be conducted to confirm concrete compressive strength. Note: Foundation elements with compressive strengths less than 2,500 psi are not allowed to be reused.

3. **Destructive Testing**: Core sample testing is required to confirm the concrete compressive strength for all fire damaged foundation systems Concrete core testing shall be in conformance with ASTM C42-20, ACI 214.4R-10, and other referenced codes and standards. (Note: Shotcrete testing method shall be per ASTM C1604/C1604M-05) The destructive testing shall be conducted by a certified testing laboratory and the testing results shall be documented in a formal report confirming the concrete strength results.

4. **Tensile Testing**: Any existing tension devices to be reused including holdowns, anchor bolts, and mudsill anchors shall have pull out tests performed in accordance with ASTM C900-23. All holdown anchors to be reused shall be load tested for a minimum load that matches the holdown manufacturer's listed tension design capacity. The minimum testing force for anchor bolts and mudsill anchors shall be 1,000 lbs tension force. The frequency of the testing shall be 25% of anchor bolts / mudsill anchors and shall be selected at random to be tested and certified. Failing bolts shall be identified and not used.

5. **Geotechnical**: The existing foundation and bearing material must be evaluated by a California licensed Geotechnical Engineer or licensed Civil Engineer practicing soils engineering. A discussion about the suitability of the foundation and the bearing material shall be provided in a soils report prepared for the property (a limited report or comprehensive report) in conformance with the Geotechnical Fire Rebuild Guidelines and current County of Los Angeles adopted Building Codes and ordinances, as adopted by the City of Malibu in the Malibu Municipal Code. Please note if any of the following conditions occur at the site, additional requirements, documentation, and justification may be required by the ESD Geology Department for the foundation reuse: uncertified fill, landslides, settlement, slippage, inadequate foundation setbacks and building clearance from descending and ascending slopes respectively, and any other known or potential geologic hazards.

In addition to the observations, testing data, and findings, the foundation feasibility report shall include an assessment from the California licensed Civil or Structural Engineer of record regarding the structural integrity and durability of the concrete. The report should include engineering justification for keeping the foundation and recommendations for any remedial work that will be required to address the observed defects and to provide compliance with the current County of Los Angeles Building codes adopted by the City in the Malibu Municipal Code. Building plans may be submitted for plan review after the feasibility report is found acceptable by the Community Development Department and approved by the Building Official. The feasibility report may be submitted and reviewed concurrently with the building plans.