EXECUTIVE SUMMARY

The following report details the building systems integration of 350 Mission, San Francisco.

With the end goal of designing a net-zero high-rise building in the heart of San Francisco, AEVITAS developed the overarching attitude of [ZEROimpact], encompassing four design goals of [ZEROinterruption], [ZEROenergy], [ZEROwaste], and [ZEROemissions]. Through integrated design analysis, AEVITAS achieves these goals through effective and efficient collaboration. AEVITAS is an integrated design team, composed of representatives from the construction, structural, electrical, and mechanical disciplines. Through a unified effort, 350 Mission's environmental impact has subsided. Information about the design of 350 Mission can be found in AEVITAS' reports as detailed in Table 1.

TABLE 1: SYSTEM OVERVIEW BREAKDOWN

ARCHITECTURAL	Floor Plan Changes, Vestibule Addition, Integrated Public Art Piece
FAÇADE	Natural Ventilation Louvers, Seismic Connections, Electrochromic Glazing
MECHANICAL	Radiant Floor System, Natural Ventilation Louvers, Dedicated Outdoor Air System
LIGHTING	LED Lighting, DALI Controls Responsive to Daylighting and Occupancy, Task Lighting
ENERGY GENERATION	Onsite Solar Array, Offsite Solar Array, Human Waste to Power Converter
ELECTRICAL	AC and DC Distribution, Natural Gas-Powered Fuel Cells, Dual Electrical Risers
STRUCTURAL	Steel Superstructure, Braced Frame Core, Composite Beams and Deck, Outrigger System, Concrete Substructure
CONSTRUCTION	Production Planning, Matrix Scheduling, Waste Management, BIM Execution Planning, Site Planning

350 Mission is located in the South of Market (SoMa) district of downtown San Francisco, an energetic, diverse neighborhood housing several prominent high rise buildings. The area is subject to microclimates and sub-microclimates due to the city's dynamic topography and marine layer.

In developing the most effective and optimal design of 350 Mission, a decision making system measures each system selection's alignment with the four design goals as well as impact and integration with the other disciplines. In addition to several diverse forms of media utilized for both communication and information exchanges, AEVITAS held documented weekly coordination meetings. A Building Information Model (BIM) Execution Plan established a schedule and coordination of software programs.

350 Mission features several integrated building components. The substructure requires a composite slurry wall system combined with internal diagonal bracing to support the excavation for the mat foundation. The building envelope balances architectural design with daylighting and natural ventilation louvers while incorporating constructability and structural weight. Supply diffusers in the lobby integrate and avoid clashing with both the core structure and interactive public artwork to supply outdoor air to the occupants directly. Similar to the lobby, radiant tubing and electrical conduit are coordinated and located on top of the concrete slab to increase flexibility and feasibility.

Given San Francisco's location, all building components, including power, ventilation, and support, are detailed to maintain function during and after a seismic event. Facilities Integration Maintenance assists in building operation and maintenance for all disciplines and components. Under the LEED 2009 for New Construction and Major Renovations Checklist, 350 Mission can achieve LEED Platinum Accreditation, accumulating 93 points out of a possible 110 points. The collaboration and integration of all building disciplines results in a holistic net-zero design of 350 Mission.