HISTORIC RESOURCE TECHNICAL REPORT - REVISED

# 3065 Bowers Avenue
# Santa Clara, California

*David J. Powers & Associates, Inc.* | *June 2023*

*Architecture*
*Planning*
*Conservation*


Architectural
Resources Group

Architectural Resources Group

3065 Bowers Avenue
Historic Resource Technical Report
Santa Clara, California

June 2023

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# 1. Introduction

## 1.1 Project Background

At the request of David J. Powers & Associates, Inc., Architectural Resources Group (ARG) prepared this Historic Resource Technical Report (HRTR) for the property at 3065 Bowers Avenue (Assessor's Parcel Number [APN] 216-46-015) in Santa Clara, California (Figure 1). The parcel contains facilities colloquially known as the Bowers Campus that were constructed for, and continue to be occupied by, Intel Corporation (Intel). The subject parcel contains three primary volumes: Santa Clara 1 (SC1), a two-story volume completed in 1971 that contains offices and fabs[1]; Santa Clara 2 (SC2), a second volume containing office and fabs completed in 1974; and Main Fab, a manufacturing facility built in the mid-1990s and later expanded, which extends from the south side of SC2. Although the three primary volumes of the Bowers Campus were constructed during discrete construction campaigns and have distinct masses, this report considers them as a single property that has expanded over time to meet Intel's programmatic needs for the site. The parcel also contains numerous paved surface parking lots, planting beds and islands, landscaped areas, and a collection of one-story trailers and other auxiliary facilities that support the fabrication activities that are housed in the primary building volumes.

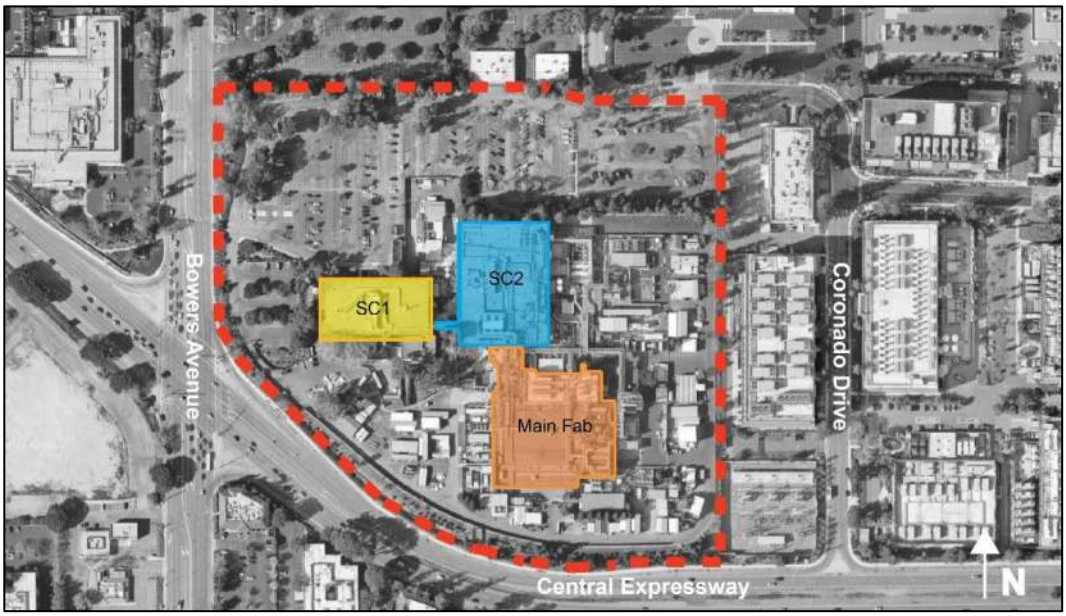


Figure 1. Site plan of the 3065 Bowers Avenue property; the dashed red line demarcates the property boundary. The property includes three primary facilities, which are labeled, with numerous auxiliary facilities that support Intel operations.
Source: Google Earth, edited by ARG

Intel proposes to construct a new facility, the Central Utility Building (CUB), within the subject parcel to the west of SC1. In order to assess potential impacts of the CUB project, this HRTR provides a physical

[1] "Fab" is a term popularly used in the semiconductor industry to refer to fabrication plants in which semiconductors are manufactured, a process that typically produces integrated circuit microchips from silicon wafers. Modern fabs are operated as highly controlled "cleanroom" environments in order to prevent the intrusion of dust and other contaminants that can cause the failure of chips during manufacturing.

description and historical overview of the entire property at 3065 Bowers Avenue. Given the proposed location of the CUB and the age of the campus's facilities, the focus of the physical description and site history is SC1 and SC2; more cursory information is provided on Main Fab and associated site elements, which were constructed after 1995 and have not yet reached the age that typically bestows historical significance. The HRTR presents an evaluation of the property for listing in the California Register of Historical Resources (California Register) to determine whether it qualifies as a historical resource under the California Environmental Quality Act (CEQA). Following the California Register evaluation, the HRTR analyzes potential impacts of the CUB project to identified historical resources within the subject parcel.

## 1.2 Current Resource Status

In order to determine whether any built environment resource at 3065 Bowers Avenue has been subject to previous documentation or evaluation, ARG staff reviewed the City of Santa Clara's Historic Resource Inventory, which is the register of significant built environment resources (i.e., buildings, structures, objects, and districts) designated at the municipal level. Pursuant to California Code of Regulations Section 15064.5(a)(2), any resource listed in the inventory would qualify as a historical resource for the purposes of CEQA. However, no resources within or adjacent to the subject parcel appear in the local Historic Resource Inventory, and ARG likewise did not identify existing local survey evaluations of 3065 Bowers Avenue's historical significance or register eligibility. Furthermore, 3065 Bowers Avenue does not appear within the California Office of Historic Preservation's Built Environment Resource Directory, which lists the past determinations of historic register listing and eligibility that have undergone formal review by the Office of Historic Preservation (i.e., as part of the Section 106 review process). Based on ARG's review, therefore, the property at 3065 Bowers Avenue does not appear to have been subject to previous documentation or evaluation for listing in local, state, or national historical registers. Accordingly, the historical resource status of resources within the subject property has not previously been assessed for the purposes of CEQA review, either individually or as components of a potential historic district.

## 1.3 California Register Evaluation Methodology

To complete the HRTR for 3065 Bowers Avenue, ARG staff completed the following:

- Conducted a site visit on January 17, 2023 to examine and photograph facilities within the subject property, including the primary building volumes, surrounding landscaped areas, and accessible interior spaces;
- Completed research using relevant repositories, including the City of Santa Clara Building Division Library;
- Reviewed online repositories, including the following: Newspapers.com; the archival newspaper database available through the San Francisco Public Library website; Online Archive of California; and United States Geological Society (USGS) EarthExplorer;
- Reviewed primary and secondary sources regarding the history and development of the Santa Clara Valley and Intel Corporation; and
- Prepared a Department of Parks and Recreation (DPR) 523-series form set for 3065 Bowers Avenue. The DPR form set is attached to this HRTR as Appendix C.

ARG also investigated potentially relevant materials held by the Intel Museum (Santa Clara, California) and the Silicon Valley Archives at the Stanford University Libraries (Stanford, California). However, ARG

did not receive responses to its reference inquiries to these repositories during the preparation of this report.

## 1.4 Summary of Findings

Based on the site conditions, property history, and historic context presented below, ARG finds that the subject property at 3065 Bowers Avenue appears to be eligible for listing in the California Register under Criterion 1 (association for significant events) for its association with Intel's critical role developing the semiconductor industry during the second half of the twentieth century. The property retains sufficient integrity to convey its significance under California Register Criterion 1, with a period of significance of 1971-1992. Due to its eligibility for listing in the California Register, the property qualifies as a historical resource for the purposes of CEQA review.

Additionally, ARG reviewed the project description and renderings of the proposed CUB project and concludes that the project complies with the Secretary of the Interior's Standards for Rehabilitation. Pursuant to the CEQA Guidelines (14 CCR § 15126.4(b)(1)), the project would have a less than significant impact to the California Register-eligible property at 3065 Bowers Avenue for the purposes of CEQA review. No mitigation is required.

# 2. Physical Description

The following section provides a physical description of the facilities and associated site features at 3065 Bowers Avenue, as well as the property's immediate setting. Additional photographs are presented in Appendix A.

## 2.1 Site Description

The subject parcel addressed at 3065 Bowers Avenue, APN 216-46-015, is located within a predominantly light industrial and commercial district in northwest Santa Clara, California. The irregularly shaped parcel is bounded by Bowers Avenue to the west, Central Expressway (County Route G6) to the south, and adjacent parcel boundaries to the east and north. The eastern portion of the subject parcel's northern boundary also follows Coronado Drive. Perimeter planting beds containing mature trees and low shrubs demarcate the majority of the parcel's boundaries. The southern boundary of the parcel along Central Expressway is lined by a sound wall constructed of rough-faced concrete masonry units, and a metal chain-link fence leads along the majority of the west and north parcel boundaries. The primary vehicular entrance to the property is a gated drive accessed from Bowers Avenue near the parcel's northwest corner; a secondary vehicular entrance is along Coronado Drive along the north parcel boundary.

Generally, the northern third of the parcel contains a surface parking lot paved in asphalt, which includes curbed planting islands that separate vehicular circulation paths. Within the planting islands are a variety of trees, shrubs, and grasses. Standing within the parking lots are steel light standards with downward-facing lights. Several prefabricated guardhouses are located along travel routes throughout the parking lot.

SC1 is located at the center of the parcel's western half, and a surface parking lot with planting islands lies between the building and Bowers Avenue. The eastern half of the parcel is dominated by the expansive

footprint of the conjoined SC2 and Main Fab, fenced mechanical yards and loading zones, concrete pads, prefabricated trailers, gangways, and various forms of facility support equipment (FSE). For the purposes of this report, FSE refers to the numerous types of ductwork, ventilation and exhaust infrastructure, scaffolding, storage tanks, and trestles that support the production activities housed within the property's interior fabs. SC1 and SC2 are connected by a two-story hyphen volume. Planting areas and poured concrete sidewalks lie immediately adjacent to SC1 and SC2 wherever it does not feature fenced yards and FSE.

Additional vehicular drives lead along the eastern and southern parcel boundaries and provide access to various parking and loading areas within the property. Surrounding parcels contain one- to four-story light industrial and office buildings; similar to the subject property, surrounding parcels typically contain surface parking lots, planting islands, and vegetation such as mature trees.

## 2.2 Santa Clara 1 (SC1)

The original building constructed on the parcel in 1971 is known as Santa Clara 1 and popularly abbreviated as SC1. SC1 is a two-story, flat-roofed office and fab facility with Late Modern architectural elements (Figure 2). SC1 has a rectangular plan oriented from east to west, measuring approximately 250' long by 125' wide. The primary volume is raised above grade, and the ground has been excavated to partially expose the basement level. The basement level is recessed and surrounded by mechanical equipment; in some areas the basement-level equipment is screened behind metal grating or chain-link fencing (Figure 3), while in other areas it is unenclosed. The excavated slopes surrounding the basement level are commonly covered in square granite pavers. The perimeter of the building is supported on regularly spaced, concrete structural columns that transition to pilasters rising nearly the full height of the building before terminating under the projecting frieze. These elements have chamfered corners and are shaped so that they angle slightly outward between the floor slabs of the first and second floors in order to accommodate bulging spandrel panels.

Figure 2. West façade of SC1, viewed facing northeast
Source: ARG, January 2023

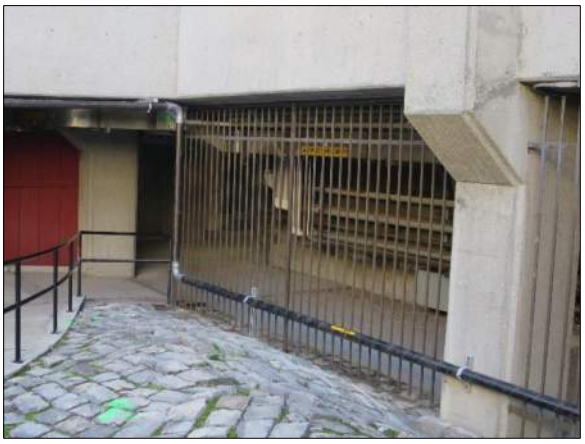

Figure 3. View of typical basement-level equipment, metal grating, and shaped concrete structural column, viewed at the east façade
Source: ARG, January 2023

Apart from the vertical columns, SC1's exterior design is configured as a series of stacked, horizontal bands or tiers. These tiers include the following: a building base that corresponds to the lower floor slab; spandrel panels between the first and second floors; and a projecting frieze at the roofline. Intervening window ribbons daylight the first and second floors. The base is constructed of exposed, smooth-finished concrete that matches the appearance and texture of the exterior structural columns. The spandrel panel, in contrast, is clad in grooved metal panels; the same material clads the frieze. The top and bottom edges of the spandrel panel and frieze are angled, which echoes the chamfered corners of the concrete pilasters. The base, spandrel, and frieze all project beyond the window bands, although in a reverse stepped pattern: the base projects just slightly, the spandrel somewhat more, and the frieze most of all (Figure 4). Although this articulation pattern creates the impression of an inverted ziggurat, the floor slabs at the first and second floors appear to be identical in dimension. The window ribbons contain bands of dark tinted glass that wrap around all façades of the building. The panes are fixed and held in anodized aluminum frames (Figure 5).

Figure 4. Façade arrangement of pilasters, base, spandrel, and frieze, viewed in profile at the east façade
Source: ARG, January 2023

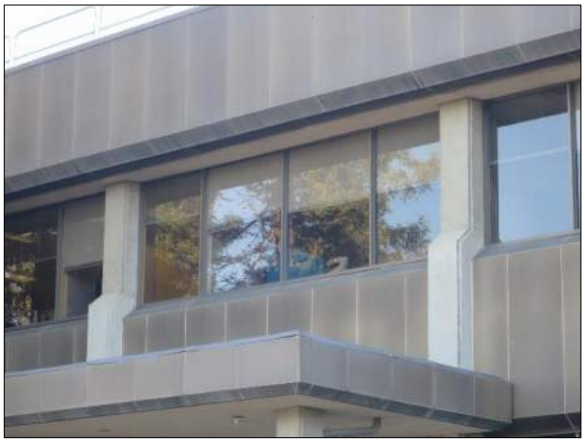

Figure 5. Typical grouping of four panes between pilasters, which contribute to the window ribbons that span each façade
Source: ARG, January 2023

SC1 features various non-original attached elements that have been added over time to support its ongoing technological fabrication use. FSE is present on the roof and on the north, west, and south façades. A metal railing now encircles the edge of the roof. A non-original one-story, flat-roofed volume known the gas pad building, measuring approximately 75' by 75', projects from SC1's south façade near the building's eastern end.

The primary façade faces north and features the main entrance to SC1 (Figure 6). The entrance is located at the center of the façade and is integrated into the band of windows that spans the first story (Figure 7). It comprises a pairing of fully glazed, metal-framed pedestrian doors and is accessed by a raised concrete landing with poured concrete steps that lead up from the adjacent parking lot. Along the sidewalk that lines the edge of the parking lot, the steps are flanked by triangular planting beds with concrete edge walls. A non-original ADA ramp descends from the west side of the landing and features two quarter turns before reaching grade. Both the landing and the ramp feature modern metal pipe handrailing. The landing is sheltered underneath a projecting canopy supported by two concrete columns that generally match the appearance of the structural columns located across the building's

façades. The outer face of the canopy is clad in the same metal as the spandrel panels and frieze and features a similar angled bottom edge. To the east of the entrance, much of the façade currently features metal scaffolding and FSE. The east end of the façade abuts an adjacent fenced equipment yard.

Figure 6. Primary (north) façade, viewed facing southeast
Source: ARG, January 2023

Figure 7. Entrance centered on the north façade, featuring concrete landing, canopy, steps, ADA ramp, and planting beds
Source: ARG, January 2023

The west façade continues the general design of the north façade, although a substantial amount of FSE projects from the building's northwest corner; a second assemblage of FSE is located south (right) of center (Figure 8). Two first-floor entrances are located near the ends of the façade and are not original to the building. FSE largely obscures the altered northern entrance, which currently comprises a single pedestrian door within an opening infilled by vertical-seam metal panels. The southern entrance is a fully glazed pedestrian door with fixed transom and side lite. Both entrances have concrete landings with edge walls; the landings extend over the excavated basement level before descending to grade. The southern entrance also features a lower landing with three broad steps that reach an asphalt sidewalk (Figure 9). The FSE and a recently installed support trailer occupy an area that originally contained vegetation and circulation paths. The west façade faces a secondary parking lot.

Figure 8. West façade, viewed facing east
Source: ARG, January 2023

Figure 9. Non-original entrance and approach steps at the south end of the west façade
Source: ARG, January 2023

When SC1 was constructed, the south façade was nearly identical to the north façade, featuring a central entrance sheltered underneath a projecting canopy. However, the visual character of the south façade has been changed through the installation of FSE, which is concentrated at its western half (Figure 10). Near the center of the façade, a section of the first-floor window band has been infilled with stucco. This area includes the entrance, which now projects slightly underneath the canopy and contains a grouping of three fully glazed, non-original pedestrian doors. Although the original canopy, concrete landing, and steps remain in place, the entrance is currently accessed by a railed metal gangway installed above the original approach sequence (Figure 11). The eastern end of the façade abuts a fenced storage yard and the one-story gas pad building.

Figure 10. South façade, viewed facing northeast
Source: ARG, January 2023

Figure 11. Entrance at the center of the south façade, featuring original canopy and non-original doors and metal gangway
Source: ARG, January 2023

The building's east façade, which faces the interior courtyard between SC1 and SC2, continues the building's typical tiered configuration. FSE and the hyphen connecting SC1 and SC2 are located near the south end of the façade (Figure 12); apart from these features, the façade appears unchanged since the building's construction (Figure 13). It has no exterior entrances. The adjacent courtyard contains

curvilinear, poured concrete walking paths, areas of cobblestone pavers, seating areas with temporary furnishings, beds with shrubs and ground-covering plants, and a gazebo installed c.1989.

Figure 12. FSE at the southern end of the east façade, adjacent to the hyphen connecting SC1 and SC2
Source: ARG, January 2023

Figure 13. East façade and adjacent courtyard north of the hyphen
Source: ARG, January 2023

The interior of SC1 contains a collection of production spaces that appear to have been updated continually since the building's construction to facilitate Intel's evolving development programs. Due to the highly controlled nature of the interior fabs, ARG did not closely inspect all interior spaces. However, few of the observed interior elements appear to date to the building's construction or early years of operation.

The basement level of SC1 contains an open space at the west end that contains new steel structural posts to support the weight of equipment installed within the first-floor fabs above (Figure 14). This level also contains an open-plan storage area, offices, and corridors. Interior walls are of exposed concrete masonry unit construction or are covered in gypsum board. Floor finishes observed throughout the basement level include linoleum tile, plywood boards, and exposed poured concrete. Some wood doors, baseboards, and chair rails are present (Figure 15).

Figure 14. Basement-level open space at the west end of SC1, containing non-original structural supports
Source: ARG, January 2023

Figure 15. Wood doors and finishes typical of the basement level
Source: ARG, January 2023

The first floor contains a reception lobby immediately inside of the building's primary entrance on the north façade (Figure 16). Fabs, clean rooms, and corridors are located within the eastern portion of SC1, while a new fab and clean room is being constructed in the west portion. Interior finishes appear not to be original and include carpet and linoleum tile flooring, gypsum board walls, rubber baseboards, and suspended lay-in acoustic tile ceilings (Figure 17). Doors along the corridors are generally constructed of steel and feature small windows. A large open stairwell at the southeast corner of the building provides access to the second floor.

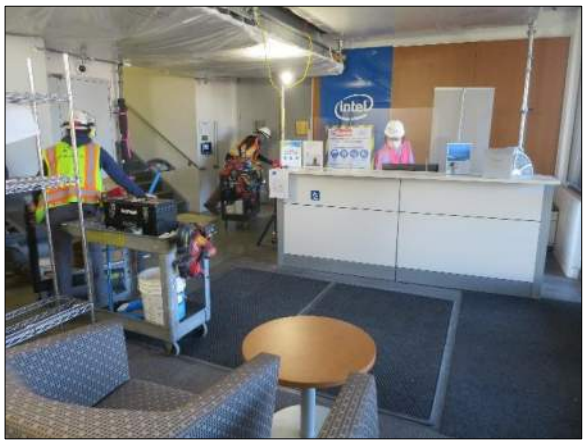


Figure 16. Reception lobby accessed through the primary entrance at the north façade of SC1
Source: ARG, January 2023

Figure 17. Non-original finishes in a typical first-floor corridor in SC1
Source: ARG, January 2023

The second floor of SC1 contains a large open-place office space with modular workstations. A fab is currently under construction within the western portion of the building. Floor, wall, and ceiling finishes are similar to those on the first floor and do not appear to be original to the building.

## 2.3 Santa Clara 2 (SC2)

Completed in 1974, SC2 lies immediately east of SC1 and is a rectangular-plan, flat-roofed office and fab facility with a footprint measuring approximately 200' wide by 275' long (Figure 18). Its primary axis runs perpendicular to that of SC1. Th exterior of SC2 has some design similarities to SC1, although it is a more exaggerated expression of the Late Modern architectural style. SC2 sits on grade with no basement; it has a raised concrete bulkhead that is exposed above the foundation. Like SC1, SC2 has a tiered, reverse-stepped form, although SC2's stepped profile is more pronounced (Figure 19). Above the bulkhead, the exterior features two tall bands of cream-colored metal panels. At the first and second floors are bands of outward-angled windows, which contain fixed tinted glass panes held in anodized aluminum frames; the window bands span the width of each façade and appear as narrow slits between the broader bands of opaque panels. The roof features a parapet along its perimeter, similar to SC1, and contains various forms of mechanical equipment.

Figure 18. SC2's typical exterior configuration of window bands separating broad, opaque areas of metal panel cladding, viewed at the north façade
Source: ARG, January 2023

Figure 19. Stepped profile viewed at the north façade, formed by outward-angled windows at the first and second floors
Source: ARG, January 2023

The primary façade of SC2 faces north towards a landscaped area containing curvilinear concrete sidewalks and large planting beds with redwoods and other trees, as well as ornamental bushes and shrubs (Figure 20). The building's primary entrance is located at the center of the façade and comprises a band of windows and glazed doors fixed between mullions clad in anodized aluminum. The entrance is recessed, creating a vestibule and landing in front of the paired door that provides access to the building's main lobby (Figure 21). An ADA ramp and set of stairs descend to grade from the landing. The entrance is flanked by engaged piers clad in plywood boards and painted to match SC2's metal panel siding. A prefabricated, non-original gowning room projects from the main volume of SC2 at the east end of the north façade.

Figure 20. North façade of SC2, viewed facing southeast; adjacent landscaping is visible in the foreground
Source: ARG, January 2023

Figure 21. First-floor entrance at the center of the north façade, featuring a recessed vestibule with concrete landing, steps, and ADA ramp
Source: ARG, January 2023

The majority of the west, south, and east façades of SC2 abut fenced equipment yards and associated support facilities, and/or are covered in various forms of FSE; therefore, much of the building's exterior at these façades could not be inspected closely. It appears that the stepped design and fenestration pattern visible at the north façade is present across the remainder of the building, although the installation of FSE has necessitated non-original openings and attachment points.

The south end of the west façade is exposed along the interior courtyard previously described (Figure 22). Between the equipment yard and SC2's juncture with the hyphen is a band of first-floor windows that correspond to the interior cafeteria. These windows are fixed, separated by aluminum-clad mullions, and located above a concrete bulkhead with a projecting sill (Figure 23). Pairings of fully glazed pedestrian doors lie at both ends of this window band.

Figure 22. West façade of SC2, viewed facing northeast from the interior courtyard; a fenced equipment yard is at left, and the first-floor cafeteria window band is at center and right
Source: ARG, January 2023

Figure 23. Cafeteria window band viewed facing southeast; the hyphen that connects SC2 with SC1 is at right
Source: ARG, January 2023

The portion of the south façade that lies west of Main Fab remains visible and continues SC2's typical façade configuration (Figure 24). This portion of the façade faces a landscaped area that contains a concrete approach walk as well as FSE carried on trestles. Main Fab joins SC2 at the center of the south façade; the eastern half of the south façade and the entirety of the east facade are largely obscured by a water purification plant and air conditioning facilities, which contain various forms of FSE, exterior enclosures, and utilitarian outbuildings (Figure 25). A loading dock containing a raised concrete platform and steel pedestrian doors is located at the north end of the east façade. At the loading dock, the walls are clad in vertical plywood siding.

Figure 24. West end of SC2's south façade, adjacent to its intersection with Main Fab; FSE stands in the foreground
Source: ARG, January 2023

Figure 25. The center of the east façade, as seen from an adjacent paved area; typical FSE and other support facilities are present across the façade and in its vicinity
Source: ARG, January 2023

Like SC1, the interior of SC2 has been remodeled and reconfigured repeatedly since the building's construction in order to accommodate the technical programs it houses. At the first floor, a reception lobby lies inside of the main entrance at the center of the north façade (Figure 26), and the cafeteria is located in the western portion of the building. Throughout the remainder of the interior, internal corridors lead among various fabs and other equipment areas (Figure 27). Observed finishes include linoleum tile and laminate flooring, gypsum board walls with rubber baseboards, and suspended lay-in acoustic tile ceilings. The second floor of SC2 contains a large open-plan office space containing exposed structural columns, modular workstations, and typical non-original finishes. The northeast portion of the second floor also contains equipment that supports fabs on the first floor.

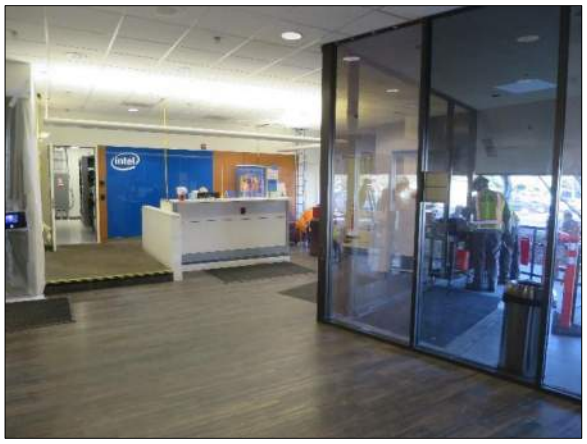

Figure 26. Contemporary finishes within the reception lobby inside SC2's primary entrance
Source: ARG, January 2023

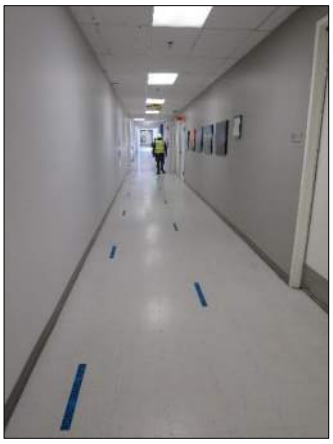

Figure 27. Layout and finishes of a typical interior corridor at the first floor of SC2
Source: ARG, January 2023

## 2.4 Hyphen

The hyphen is a flat-roofed, elongated rectangular-plan volume that spans the approximately 50-foot distance between SC1 and SC2. The hyphen is presumed to date to 1974, the same year SC2 was completed, and provides interior circulation between the two adjoining volumes at the first and second floors. The roof of the hyphen is slightly lower than the roof planes of either SC1 or SC2.

The hyphen's exposed north and south exterior faces are fully glazed curtain walls, in contrast to the two volumes it links (Figure 28). However, the hyphen has some similarities to the design of SC1. At the basement level, the hyphen features angled concrete structural columns that mimic the design of the columns at SC1; however, the hyphen's columns terminate below the base tier rather than rise the full height of the volume as pilasters (Figure 29). The hyphen also features tinted glass that matches the appearance of the glass in SC1's window bands. The hyphen's glazing is arranged in a grid of anodized aluminum frames, which continue to the roofline. The roofline features a projecting, angled soffit that meets the bottom edge of SC1's frieze. The hyphen's roof accommodates various forms of FSE running between SC1 and SC2.

Figure 28. North face of the hyphen between SC1 and SC2, viewed facing south from the interior courtyard
Source: ARG, January 2023

Figure 29. Shaped concrete columns at the basement level of the hyphen, which mimic the appearance of SC1's columns
Source: ARG, January 2023

The interior of the hyphen contains a first-floor corridor and a railed walkway at the second floor. These spaces feature exposed structural columns and modern finishes, including linoleum tiles and carpeting (Figure 30).

Figure 30. Second-floor walkway through the hyphen, viewed facing west from SC2 towards SC1
Source: ARG, January 2023

## 2.5 Main Fab

Main Fab, also referred to as BW1, is an extended-height one-story manufacturing facility located south of SC2; it is formed by multiple rectangular volumes that form a footprint measuring approximately 275' by 275', and it has numerous flat roof planes. The original component of the facility, constructed in c.1996 and called M2, is a generally square volume extending south from SC2 via a hyphen. M3 was constructed c.2004 and comprises additional volumes along the east and north sides of M2. Main Fab is the most utilitarian facility within the subject property: it has concrete walls and is clad in vertical metal panels. Like SC2, much of Main Fab is heavily covered in a vast and irregular collection of FSE, and it has an assortment of pedestrian doors and vehicular loading bays. Appended storage and equipment yards,

which contain temporary support trailers and copious amounts of FSE, appear to have been added in an ad hoc fashion over time and contribute to the irregularity of the facility's exterior organization.

Primary entrances to Main Fab are located at the north end of the west façade, near the juncture with SC2; here, a one-story volume projects to the west (Figure 31). One pairing of fully glazed doors is located north of the projecting volume, immediately adjacent to the south façade of SC2 (Figure 32); another door pairing is located at the angled southwest corner of the projection. The remainder of the west façade features fenced equipment yards containing mobile support trailers and FSE. The south façade faces a paved, fenced loading zone accessible through a rolling gate; aerial photographs reveal the façade contains a series of single and paired pedestrian doors, as well as overhead roll-up vehicular loading doors. The east and north façades similarly feature vehicular loading zones containing storage trailers, trestles, raised gangways, and other forms of FSE (Figure 33). The northeast corner of Main Fab features a raised concrete walkway and loading platform sheltered under a metal canopy roof; this walkway provides access to additional pedestrian entrances into the building (Figure 34).

Figure 31. Northern portion of Main Fab's west façade, including the projecting volume with an entrance at its angled corner
Source: ARG, January 2023

Figure 32. Paired door at the north end of the west façade; SC2's south façade is at left
Source: ARG, January 2023


Figure 33. FSE and support structures located near the center of Main Fab's east façade
Source: ARG, January 2023

Figure 34. Concrete walkway and canopy at the northeast corner of Main Fab
Source: ARG, January 2023

Only limited areas of Main Fab's interior could be inspected during field survey. Generally, the building is arranged with interior fab spaces surrounded by perimeter corridors, which have typical linoleum tile flooring, gypsum board walls, and suspended lay-in acoustic tile ceilings (Figure 35). Loading docks located inside of the loading zones at the south and east sides of the building have unfinished concrete floors, and metal trusswork at the ceiling is exposed (Figure 36). Steel staircases in the building climb to catwalks that pass above equipment that supports the building's fab spaces.

Figure 35. Finishes within a typical corridor in Main Fab
Source: ARG, January 2023

Figure 36. Typical loading dock within Main Fab
Source: ARG, January 2023

## 2.6 Auxiliary Facilities

As noted previously, the subject property contains support facilities that are directly attached to SC1, SC2, or Main Fab, which include storage structures, trailers and sheds, and gowning rooms. In addition, numerous detached buildings and structures are concentrated along the south and east parcel boundaries. All of these facilities appear to have been constructed after 2000; due to their recent age, they are not described in detail. They generally convey a utilitarian architectural character and support the product development and manufacturing uses of the property's fabs. Many of the auxiliary facilities are temporary mobile trailers that lack permanent foundations and are slightly elevated above grade

(Figure 37). Additional facilities are prefabricated metal storage sheds with gabled roofs and corrugated metal siding panels (Figure 38 and Figure 39). The property also features industrial facilities that are more specialized in design and use but still appear to be prefabricated (Figure 40).

Figure 37. Typical mobile trailer located near the eastern parcel boundary, currently serving an office role
Source: ARG, January 2023

Figure 38. Prefabricated gabled sheds lining the southern perimeter of the property, near the southeast corner of Main Fab, viewed facing northeast
Source: ARG, January 2023

Figure 39. Extended-height storage building located east of Main Fab near the eastern parcel boundary
Source: ARG, January 2023

Figure 40. Specialized detached structure placed within the parking lot north of SC1, viewed facing southeast
Source: ARG, January 2023

## 3. Site History

The following site history has been compiled using the following sources: building permits on file at the City of Santa Clara Building Division (Table 1); aerial imagery accessed through the University of California Santa Barbara (UCSB) Library's website, United States Geological Survey (USGS) EarthExplorer website, and HistoricAerials.com; USGS topographic maps; and historic newspapers available through online databases such as Newspapers.com.

In contrast to its current suburban environment, the site of 3065 Bowers Avenue was characterized by agricultural production and a sparsely developed rural setting for approximately a century before Intel began to construct its facilities there in the early 1970s. A map of Santa Clara County published in 1876 illustrates a prevailing land use pattern of small agricultural plots north of the Southern Pacific Railroad (SPRR) corridor (now used by Caltrain). As early as this period, a parcel generally corresponding to the currently-day boundaries of 3065 Bowers Avenue was defined by Kifer Road to the south (the current location of Central Expressway) and Coffin Road (now Bowers Avenue) to the west (Figure 41). The map identifies S. Morrison as the owner of the parcel, and the naturally meandering path of Campbell Creek (later called Saratoga Creek) traversed the property from southwest to northeast, after which it turned due north and met the Guadalupe River at Alviso. Rural residences dotted the countryside, which included strawberry fields. The nearest community node consisted of a school and churches along Lawrence Station Road (present-day Lawrence Expressway) approximately one mile to the west of the subject property.[2]

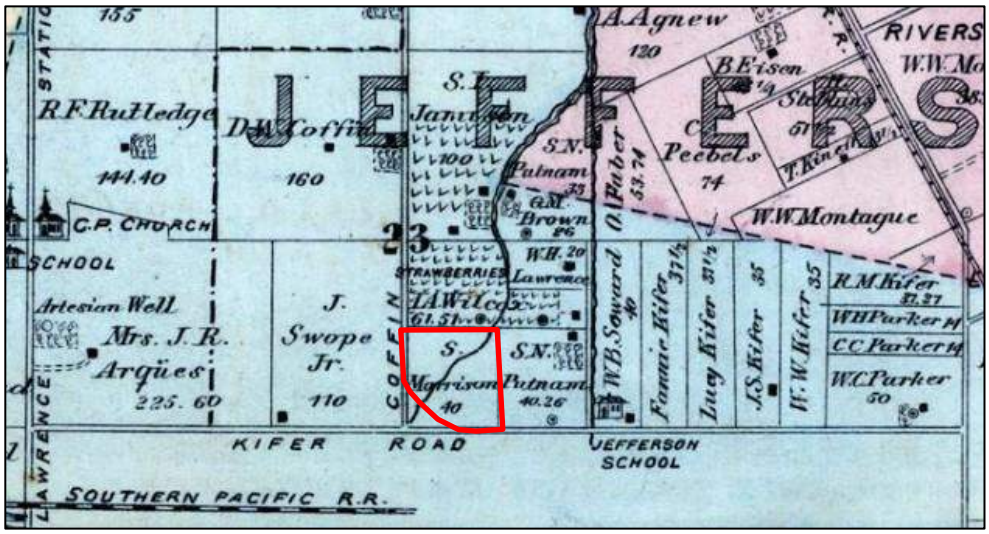


Figure 41. Detail of 1876 map of Santa Clara County, showing the subject parcel outlined in red. North is up. Source: *Historical Atlas Map of Santa Clara County, California* (San Francisco: Thompson & West, 1876), edited by ARG

Over the ensuing several decades, the agricultural landscape of fields and orchards that characterized northwestern Santa Clara County appears to have changed little. The current site of 3065 Bowers Avenue remained well outside the boundaries of the City of Santa Clara; the nearest institutional landmark was the Agnews State Hospital, a psychiatric facility built in 1885 in a then-rural location approximately 1.5 miles to the east. Although topographic maps published in the first half of the twentieth century do not identify what varieties of agricultural products were grown surrounding the subject property, aerial photographs taken in the immediate post-World War II period capture the unmistakable tree rows of an

[2] *Historical Atlas Map of Santa Clara County, California* (San Francisco: Thompson & West, 1876), Map 2.

orchard surrounding two large buildings near Saratoga Creek (Figure 42).[3] Later accounts have identified it as a pear orchard.[4]

Figure 42. 1948 aerial photograph of the subject property (outlined in red) and its environs, characterized by orchards and other agricultural land uses; the SPRR corridor is visible near the bottom of the frame. North is up. Source: USGS, edited by ARG

Although the orchard remained in place for more than 20 additional years, the pace of suburban development along the fringes of Santa Clara and San José accelerated in the 1950s and 1960s. By 1958, housing tracts had appeared south of the SPRR corridor, replacing the earlier agricultural landscape with single-family homes neatly arranged along gently curving streets. Santa Clara's northern boundary with Sunnyvale also shifted north during this same period, crossing Kifer Road for the first time and encompassing the subject property.[5] Concomitant with suburban development in the Santa Clara Valley, the late 1960s saw the construction of Central Expressway, a county highway running generally east-west between Palo Alto and the western edge of San José. The route of the expressway approached the subject parcel from the west and, before reaching Coffin Road, angled to the southeast; it straightened due east again immediately north of Kifer Road. The new expressway thus clipped off the southwestern corner of the subject property and gave it its current irregular boundary (Figure 43). The route of the

[3] USGS, Image AR1HR0000020147 (3065 Bowers Avenue, Santa Clara, California), 1948, https://earthexplorer.usgs.gov/.

[4] Intel Corporation, *Thirty-Five Years of Innovation* (Santa Clara: Intel Corporation, 2003), 8; Leslie Berlin, *Troublemakers: Silicon Valley's Coming of Age* (New York: Simon & Schuster, 2017), 149.

[5] National Environmental Title Research, Aerial Photograph (3065 Bowers Avenue, Santa Clara, California), 1956, https://www.historicaerials.com/viewer.

expressway passed just south of the orchard buildings on the property, but they remained standing for the time being.[6]

Figure 43. 1968 image of the subject property, outlined in red, showing residential tract development south of the SPRR corridor and the newly constructed Central Expressway bisecting the parcel. North is up.
Source: UCSB Library, edited by ARG

In 1970, the Intel Corporation (described in greater detail in Section 4.3, below) announced that it had purchased the 27-acre property at Central Expressway and Coffin Road for a new five-building headquarters complex. Intel, a swiftly growing semiconductor company specializing in memory chips, had been founded less than two years earlier in nearby Mountain View. Due to its ambitious product development efforts, the company was outgrowing its original office space in a one-story building on Middlefield Road much sooner than the duration of its five-year lease there; Intel identified the need for far larger facilities to house the growing company. Reflecting Intel leaders' exceptionally confident vision for the company's future, the original plans for the headquarters called for a five-building complex that would provide 400,000 square feet of space to house administration and production functions—overseen by more than 2,000 employees. (In contrast, Intel employed just over 200 people in 1970.) Intel envisioned that the headquarters would require 3,000 parking spaces, and the total cost for the complex was forecast to reach between $15 million and $20 million.[7]

[6] UCSB Library, Image cas-2310_1-227 (3065 Bowers Avenue, Santa Clara, California), 1968, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.
[7] "Intel Corp. Breaks Ground for New Headquarters," *Palo Alto Times*, April 21, 1970, 9; "18-Month-Old Intel Maps Plant Expansion," *Electronic News*, April 6, 1970, 59.

Despite its grand ambitions, however, Intel advanced its plans only incrementally and began by constructing a single building on the property, which was designed by San Francisco architecture firm Simpson, Stratta and Associates (Figure 44). The City of Santa Clara issued Intel a building permit for the project in 1970, and Howard J. White of Palo Alto served as general contractor. The two-story, nearly 80,000-square-foot building was completed the following year.[8]

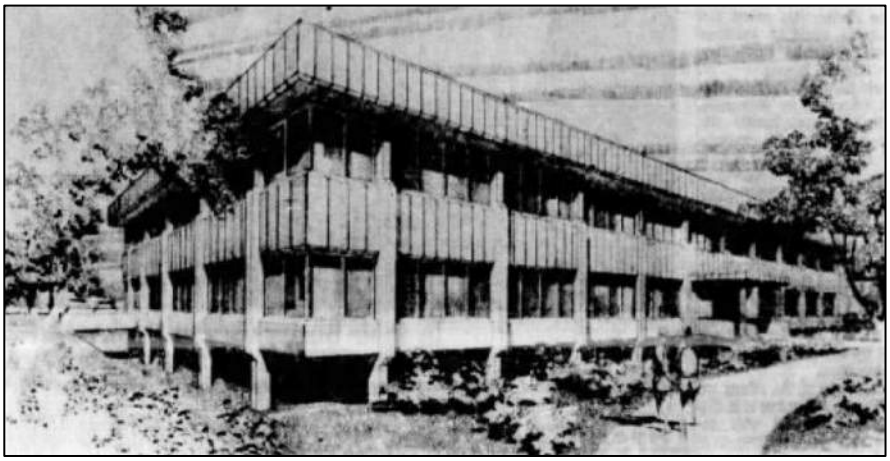

Figure 44. Rendering of SC1's design published when Intel announced plans for its five-story headquarters complex in Santa Clara
Source: *Palo Alto Times*, April 21, 1970

The building housed nearly all of Intel's functions at this time, including administration, engineering, and fabrication. As described the company's 1971 annual report,

> Our physical plant grew by 300% in 1971 with completion of our new 78,000 square foot Santa Clara headquarters. Substantial start-up costs were incurred, but the facility allowed us to install improved new wafer fabrication and assembly areas while maintaining continuous production at our original Mountain View plant. The new facility has modern work areas with clean rooms, controlled air flowers and special fume, chemical and solvent waste disposal systems to greatly reduce air and water pollution. Installation of automated mask drawing equipment reduces the time required to produce new circuit designs. Altogether we boosted production of Large Scale Integrated circuits (LSI) to 3½ times that of 1970. Our new facilities should be adequate for production demands through 1972.[9]

Intel anticipated that, as the company built out its new campus, SC1 ultimately would house engineering exclusively. Original plans were to construct a five-story building at the property that would hold its corporate headquarters, but it was never built—so SC1 remained the company's nucleus into the early 1990s.[10]

Photographs of SC1 taken shortly after its construction illustrate the raised and tiered design of the building mass (Figure 45) surrounded by the relatively minimal site treatments designed by landscape

[8] "Intel Corp. Breaks Ground," 9; "18-Month-Old Intel," 59; City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue, accessed January 18, 2023, https://www.santaclaraca.gov/our-city/departments-a-f/community-development/building-division.
[9] *Intel Annual Report 1971* (Santa Clara: Intel Corporation, 1971), 2.
[10] "Intel Corp. Breaks Ground," 9; "18-Month-Old Intel," 59.

architecture firm Royston, Hanamoto, Beck, and Abey: these comprised a grass lawn southwest of the building, undulating pedestrian walks and curb lines, several young trees, and planting areas containing low shrubs or other ground-covering vegetation. Light standards with outward-facing glass panels stood alongside the pedestrian walks. Notably, the lawn contained a prominent identification sign that bore Intel's corporate logo (Figure 46). Befitting SC1's location in automobile-reliant Santa Clara County, surface parking lots surrounded the building (Figure 47)—although a portion of the pear orchard remained standing east of SC1 for the time being.[11]

Figure 45. Intel employees gathered to the southwest of SC1, c.1971, soon after the building was constructed; the west and south façades are visible.
Source: Intel Corporation

Figure 46. West and south façades of SC1, with planting beds and identification sign in the foreground, c.1971
Source: Silent Icons of the Silicon Valley

Figure 47. Intel founders Gordon Moore and Robert Noyce walking along the parking lot southwest of SC1, with adjacent properties and the Santa Cruz Mountains in the background
Source: Intel Corporation

Within Intel's first year of occupancy of SC1, one of its interior fabs was the site of a milestone in the history of the global electronics sector: the completion of the Intel 4004 microprocessor (described in greater detail in Section 4.3). Within the few years that followed the launch of the 4004, Intel's "Bowers

[11] Berlin, *Troublemakers*, 149.

campus" (named after Bowers Avenue, the new name selected for the morbid-sounding Coffin Road along the property's western boundary) expanded, although not yet matching the complete vision Intel had unveiled in 1970. In the summer of 1973, the company received permits to erect a two-story industrial building and office addition on the property.[12] The resulting facility, SC2, replaced the portion of pear orchard that remained immediately to the east of SC1 (Figure 48 and Figure 49) and provided Intel with additional office and manufacturing space to support the company's growing needs.[13] Research completed for this report did not identify the architecture firm responsible for designing SC2, although it is possible that Simpson, Stratta & Associates was also selected due to some similarities its design had with SC1's.

Figure 48. Noyce standing at the Bowers campus, with SC2 under construction behind him, c.1973
Source: Intel Corporation

Figure 49. SC1 (at center) and SC2 (at right) photographed in 1975
Source: Creative Commons

During the decade that followed Intel's initial headquarters construction on Bowers Avenue, the site evolved from a still-lonely corporate outpost along Central Expressway to just one component of a blanket of suburban fabric that stretched to the southern end of San Francisco Bay. Although residential tracts characterized the development pattern to the south, numerous other electronics firms ultimately followed Intel's lead and established campuses between the SPRR corridor and U.S. 101. Parcels at the intersection of Central Expressway and Bowers Avenue near the Intel campus attracted firms such as Avantek, Cobilt, and Applied Materials.[14] Speculatively built industrial parks also contributed to northern Santa Clara's landscape of low-density facilities that housed high-technology companies and auxiliary firms.[15]

Despite the tremendous amount of construction that occurred surrounding Intel's Santa Clara campus, by 1980 the complex still comprised only the original two buildings: SC1 and SC2. Intel's original plans to

[12] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.
[13] Berlin, *Troublemakers*, 149.
[14] "Avantek Breaks Ground for Major Expansion," *Palo Alto Times*, June 26, 1972, 6; Myron K. Myers, "Cobilt Introduces New System for Making Semiconductors," *Palo Alto Times*, April 30, 1974, 12; Myron K. Myers, "Applied Materials Boasts No Across-the-Board Competition," *Palo Alto Times*, May 3, 1974, 11.
[15] "Industrial Park Construction Begins," *Palo Alto Times*, September 16, 1974, 8.

construct further engineering, production, and administration facilities on the Bowers Campus did not progress as the company moved its attention to locations further afield from Santa Clara: it constructed a fab in Livermore, California in 1973 and, over the next several years, built new domestic facilities in Oregon, Arizona, and New Mexico.[16] The northern half of the property contained a surface parking lot, but much of the southern half remained undeveloped during the 1980s and the first half of the 1990s (Figure 50). Saratoga Creek appears to have been redirected into the channelized Saint Thomas Aquinas Creek a few blocks to the east by 1980.[17]

Figure 50. 1980 aerial photograph, illustrating SC1 and SC2 on the Bowers Campus (outlined in red) surrounded by parking lots to the north, and undeveloped land along the southern parcel boundary. Up is north.
Source: University of California Santa Barbara Library, edited by ARG

The 1990s saw two major developments related to Intel's facilities in Santa Clara. The first was the opening of a new headquarters building within a site already operated by Intel, located along Mission College Boulevard just north of U.S. 101 in Santa Clara.[18] The new headquarters, referred to as the Mission Campus, opened in 1992. The second development was the construction of a large new facility in the Bowers Campus, known as M2—the earliest constructed portion of Main Fab south of SC2. The City of Santa Clara issued a building permit in 1996 for an "addition," which appears to refer to M2.[19] As captured in aerial photographs taken in the late 1990s, M2 was surrounded by loading areas and bulbous lawns (Figure 51). As the 1990s progressed, Intel built new support facilities that projected from both SC1

[16] Intel Corporation, *Thirty-Five Years*.
[17] UCSB Library, Image gs-vezr_2-54 (3065 Bowers Avenue, Santa Clara, California), 1980, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.
[18] "Intel Corp. To Break Ground," *San Francisco Chronicle*, October 24, 1990, C2.
[19] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.

and SC2, including the gas pad building at the southeast corner of SC1 and various volumes at the south and east sides of SC2.[20]

Figure 51. 1999 aerial photograph of the Bowers Campus, outlined in red, depicting the newly constructed M2 south of SC2. Up is north.
Source: University of California Santa Barbara Library, edited by ARG

Aerial photographs document a pattern of incremental evolution on the Bowers Campus from the turn of the twenty-first century to the present day, as Intel continued to adapt its existing facilities and to construct new ones to meet the company's evolving technical needs.[21] M3 expanded Main Fab to the east in c.2004, when Intel received a permit to construct an addition to an existing manufacturing building (M2) that would add more than 10,000 square feet. A wide range of FSE appeared incrementally—particularly east of SC2 and Main Fab beginning around 2010. The pace of new construction and alterations at the property is illustrated by the high (and ever increasing) volume of building permits documented in the City of Santa Clara's permit record: 45 between 1970 and 1979; 86 between 1980 and 1989; 286 between 1990 and 1999; 202 between 2000 and 2009; 613 between 2010 and 2019; and 365 since the start of 2020 alone.[22]

The property currently houses Intel Mask Operations, a process that uses templates to replicate the circuitry designs on chips that are used throughout Intel's manufacturing processes across the globe.

[20] UCSB Library, Image napp-3c_10542-118 (3065 Bowers Avenue, Santa Clara, California), 1999, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.
[21] National Environmental Title Research, Aerial Photograph (3065 Bowers Avenue, Santa Clara, California), 2004, 2010, 2014, 2016, 2018, 2020, https://www.historicaerials.com/viewer.
[22] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.

Table 1 below summarizes the most relevant building permits on file at the City of Santa Clara Building Department for major exterior alterations to the property at 3065 Bowers Avenue. City records document many alterations to the property since the construction of SC1 in the early 1970s: given the facility's continued use for product development and fabrication, Intel frequently has undertaken interior tenant improvements, mechanical system upgrades, and the construction of exterior storage buildings and equipment enclosures that support the operations of the primary facilities. ARG reviewed the complete permit list and identified those that are most applicable to the current analysis, which are listed below. The selected permits do not include the minor and/or interior scopes of work that reflect the continuum of operations and incremental upgrades to the property over time. Hundreds of permits associated with the property are excluded because they document changes to electrical systems, HVAC, drainage, sewers and plumbing, and interior walls and finishes. The installation of exterior equipment, foundations, and canopies are furthermore not listed below.

Table 1. Construction Chronology for 3065 Bowers Avenue

| Permit No. | Year Issued | Description of Work |
|---|---|---|
| BLD1970-36770 | 1970 | Construct 2-story industrial building |
| BLD1973-41497 | 1973 | Erect 2-story industrial building |
| BLD1973-41645 | 1973 | Erect addition and office area |
| BLD1977-46536 | 1977 | Construct loading dock and metal canopy |
| BLD1977-46536 | 1977 | Construct parking lot |
| BLD1989-82730 | 1989 | Construct gazebo |
| BLD1994-102108 | 1994 | Construct guard shack/gates |
| BLD1996-107776 | 1996 | Add retaining wall |
| BLD1996-108458 | 1996 | Install 8'-6" fence |
| BLD1996-111900 | 1996 | Building addition |
| BLD2004-02581 | 2004 | Expand existing building to add new manufacturing building |

Source: City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue, accessed January 18, 2023, https://www.santaclaraca.gov/our-city/departments-a-f/community-development/building-division.

# 4. Historic Context

## 4.1 Prewar Development of the Santa Clara Valley

The County of Santa Clara is one of twenty-seven California counties created in 1850, the year that California gained statehood. San José was selected as the first state capital, and the combination of legislators, newsmen, and others seeking employment in the city spurred urban development in the surrounding Santa Clara Valley region. The fertile valley also attracted agricultural interests, including many former gold miners who shifted their efforts from prospecting to farming or ranching.[23]

Outside of San José, cattle ranching was the Santa Clara Valley's primary economic activity in the early years of California statehood. Initially, the open range method was common among ranchers, but pasture lands dwindled as the region became more densely settled; stock farming, which utilized smaller lots and intensified production techniques, supplanted pasture grazing by the 1860s. Wheat was also a staple agricultural product of the Santa Clara Valley at this time, as the region's highly fertile soil facilitated easy cultivation and high yields with relatively little capital investment. By 1854, thirty percent of California's total wheat crop was produced in Santa Clara County, and it was "arguably the most important agricultural county" in the state.[24] Other grain crops, primarily barley and oats, were also produced in significant volumes.[25]

In addition to agricultural development, the 1860s saw the introduction of railroad transportation into Santa Clara County. The San Francisco & San José Railroad was organized in 1860, and the first train arrived in San José from San Francisco on January 16, 1864. The Central Pacific Railroad (originally the Western Pacific Railroad) was completed between San José and Niles, California, in 1869, connecting San José with the transcontinental railroad and opening the Santa Clara Valley to markets across the United States. The railroad, subsequent population growth, and intensified agricultural production changed the landscape of the valley, catalyzing the development of small towns along the rail lines and resulting in the breakup of large land holdings.[26]

By 1870, nearly all acreage in rural Santa Clara County was devoted to wheat and barley production. When yields fell in 1879-1880, however, farmers quickly diversified their interests to include dairy cows, sheep for wool, poultry for eggs, swine for meat, and hay, grape vines, and fruit trees. The latter proved to be particularly lucrative. By the late 1880s, orchard products (prunes, in particular) came to dominate agricultural production in the Santa Clara Valley. The region's fruit canning and packing industry was pioneered by a San José physician, Dr. James Dawson, in 1871 and grew alongside orchard production. Subsequently, the manufacture of food processing machinery and orchard spraying equipment became an important aspect of the local industrial economy. Early industrial development in Santa Clara County began to appear in 1864 alongside the recently constructed transportation lines.[27]

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[23] Archives & Architecture, LLC, *County of Santa Clara Historic Context Statement* (Santa Clara, California: County of Santa Clara Department of Planning and Development Planning Office), revised 2012, 7.
[24] Jim Gerber, "The Origin of California's Export Surplus in Cereals," *Agricultural History* 67, no. 4 (Autumn 1993): 47.
[25] Archives & Architecture, *County of Santa Clara Historic Context Statement*, 37-38.
[26] Ibid., 40.
[27] Ibid., 40-41.

Fruit production in the Santa Clara Valley continued to increase, peaking in the 1920s (Figure 52). As the ratio of crop value to land area increased, many of the large, diversified farms and wheat fields that had been prevalent in the nineteenth century were subdivided into specialized "fruit ranches" that were three to 50 acres in area. The introduction of the automobile and commercial development of the trucking industry in the early twentieth century also impacted land use patterns in the valley, as it greatly facilitated local distribution and catalyzed the development of city roads and intercity highways. By 1928, all of San José's city streets had been paved, and highways connected the city to San Francisco, Oakland, and the coast.[28]

Figure 52. Postcard depicting a blooming orchard scene in the Santa Clara Valley, photographed c.1907-1915
Source: History San Jose

At the onset of the Great Depression, there were 38 canneries and 13 packing plants in Santa Clara County. 172,190 acres of land were engaged in crop production, approximately 66,000 of which were devoted to prunes and 20,000 to apricots. Orchards and related industries were hit particularly hard during the 1930s, in which time the prices of California's specialty crops fell further and faster than those of basic agricultural commodities, such as wheat.[29] The local workforce, already facing low wages and an unprecedented level of unemployment, additionally dealt with an influx of farmers displaced by the Dust Bowl. Low wages, substandard working conditions, and poor job security catalyzed unrest and labor mobilization in the 1930s, and union membership and related activism increased substantially during the Depression years. In August 1931, the Cannery and Agricultural Workers' Industrial Union organized a strike of nearly sixteen thousand cannery workers in the Santa Clara Valley, in protest of a 20% wage decrease.[30] By the end of the decade, employees in all San José canneries were unionized.[31]

[28] Ibid., 43-44.

[29] Glenna Matthews, "The Apricot War: A Study of the Changing Fruit Industry during the 1930s," *Agricultural History* 59, no. 1 (January 1985): 25-29.

[30] Kevin Starr, *Endangered Dreams: The Great Depression in California* (New York: Oxford University Press, 1996), 69-70.

[31] David Bacon, "Roots of Social Justice Organizing in Silicon Valley," *El Reportero*, May 23, 2016.

The fruit industry gradually recovered from the effects of the Great Depression, but military training and home-front production associated with World War II played the greater role in the Santa Clara Valley's economic resurgence. The San Francisco Bay area was the gateway to the Pacific theater of the war, and thousands of military personnel cycled through the area for training and processing at Moffett Field and shipyards along the coastline. Numerous industrial plants that constructed marine engines and landing craft were established in Sunnyvale and Santa Clara; the two largest military contractors were the Food Machinery Company and the Joshua Hendy Iron Works, whose contracts totaled $289 million. The growth of these wartime industries changed both the physical and ethnic landscape of the Santa Clara Valley. The industrial plants employed local residents, including women, who had previously found work in orchards and canneries; they in turn were frequently replaced by Mexican Americans and *braceros*, who were Mexican nationals working in the United States under the auspices of the Mexican Farm Labor Agreement. At the same time, the Santa Clara Valley's agricultural acreage shrank, as farms and orchards were converted to industrial plants and housing for the region's increased population.[32]

## 4.2 Postwar Industrialization in the Santa Clara Valley

The population and economy of the Santa Clara Valley grew rapidly in the years following World War II, as the economic focus of the region shifted from agriculture to electronics and manufacturing. Orchards were gradually replaced with residential subdivisions and shopping centers, and rural roadways evolved into freeways to accommodate the massive influx of people and commercial activity that accompanied increasing industrialization and the related population boom.[33]

The growth of the region's electronics sector and the transformation of the "Valley of the Heart's Delight" into "Silicon Valley" in the postwar years was driven by a growing number of defense contracts and Stanford University officials' efforts to institutionalize a relationship between the research university and the federal government. Stanford contributed significantly to the economic success of the Santa Clara Valley in the postwar years. From the university's inception in 1891 near Palo Alto, its founders had intended the school to have a strong emphasis on science, engineering, and practical applications. The 1927 appointment of radio engineer Frederick Terman, who would be named Stanford's dean of engineering in 1944 and provost in 1955, reinforced this mission. Terman educated and encouraged a number of students who ultimately established some of the most successful electronics firms in the country, including William Hewlett and David Packard of the Hewlett-Packard Company. Terman's greater contribution to the Santa Clara Valley, however, was his effort to build a "university-government alliance" for defense-related research.[34] Terman played a crucial role in Stanford's efforts to secure defense research contracts from the federal government in the late 1940s; he believed that government partnerships were the future of U.S. research institutions and American military security. In the ensuing Cold War, the government granted billions of dollars in federal contracts to universities and firms in the Santa Clara Valley, which guided the technological and economic advancements of the region.[35]

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[32] Glenna Matthews, *Silicon Valley, Women, and the California Dream: Gender, Class, and Opportunity in the Twentieth Century* (Stanford, California: Stanford University Press, 2003), 82-88.

[33] Matthews, *Silicon Valley, Women, and the California Dream*, 46-47.

[34] David Naguib Pellow and Lisa Sun-Hee Park, *The Silicon Valley of Dreams: Environmental Injustice, Immigrant Workers, and the High-Tech Global Economy* (New York: New York University Press, 2002), 60.

[35] Ibid., 61; John M. Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940* (Berkeley, CA: University of California Press, 1992), 133-134.

Research-oriented industry, much of it funded by Department of Defense grants during the Cold War, fueled the Santa Clara Valley's transformation from an agriculture- and extraction-based economy to one based on scientific research and technological advancement. A synergistic relationship developed between the region's universities, the federal government, local municipalities, and the local business community. In 1951, Stanford University founded the Stanford Industrial Park, which attracted major tenants including Hewlett-Packard, Eastman Kodak, Varian Associates, the Sylvania Products Company, the Philco-Ford Corporation, General Electric, and the research division of the Lockheed Corporation (later Lockheed Martin Corporation). Other major firms, such as the Fairchild Camera and Instrument Corporation, Memorex Corporation, and National Semiconductor, all located their facilities nearby in communities like Palo Alto, Menlo Park, Sunnyvale, and Mountain View. Municipal governments, for their part, incentivized industrial growth by providing tax relief and other incentives, and by clearing tracts of land for development. Underpinning all of this growth were grants and contracts extended by the Department of Defense; by the late 1970s, Santa Clara County received $2 billion annually in federal defense contracts, a trend that continues today.[36]

Approximately 800 electronics businesses emerged in Santa Clara County between 1950 and 1974, drawn by government contracts, municipal governments' incentives, and a desire to locate themselves alongside the companies and university programs that had established themselves as leaders in the field.[37] The development of integrated circuitry, which made possible the pocket calculator, and the microprocessor, which led to the proliferation of computers for consumer use, solidified the region's position as the electronics industry leader in the 1960s and beyond. The growth of the technology and industrial sectors led Santa Clara County's population to swell from just under 300,000 residents in 1950 to over one million in 1970, one year before journalist Donald Hoefler coined the term "Silicon Valley."[38]

## 4.3 Intel Corporation and the Microprocessor Revolution

Intel Corporation has become a household name across the United States due to the company's role developing and manufacturing microprocessors used in many of the personal computers (PCs) that have emerged on the consumer market since the 1980s. The company's influence and financial success, however, stretch back several decades to the initial period of Silicon Valley's development after World War II. Intel's roots are tightly intertwined with the histories of two of the earliest pioneers in the Bay Area electronics industry: the Shockley Semiconductor Laboratory and Fairchild Semiconductors. William Shockley founded the first of these in Mountain View in the mid-1950s and was a pioneer in adapting silicon as a semiconductor medium for transistors.[39] Whereas germanium was then the standard material used for this application, Shockley recognized that silicon had the potential to be cheaper to manufacture and more efficient. Although Shockley failed to successfully develop a silicon-based transistor for the commercial market, engineers at other electronics firms were inspired to continue work on the concept. One of these companies was Fairchild Semiconductors, which was established by eight engineers who defected from Shockley Semiconductor Laboratory in 1957. By utilizing techniques developed by Bell Labs to enhance the conductivity of silicon, the Fairchild engineers focused their energies on further

[36] Pellow and Park, *The Silicon Valley of Dreams*, 60-61; Archives & Architecture, *County of Santa Clara Historic Context Statement*, 46.
[37] Pellow and Park, *The Silicon Valley of Dreams*, 62.
[38] Leslie Berlin, *Troublemakers: Silicon Valley's Coming of Age* (New York: Simon & Schuster, 2017), 73.
[39] Transistors are responsible for conveying electrical signals and are considered the building blocks of electronic devices.

developing the silicon transistor for use in industrial and consumer electronics. Under the direction of Robert Noyce, an MIT-trained physicist, the Fairchild team homed in on developing an integrated circuit: a single unit that could perform multiple electronic processes that previously were accomplished by separate types of transistors. Following a period of trial and error, Fairchild developed the world's first planar silicon-based integrated circuit (also known as a microchip) in 1960.[40]

The introduction of the integrated circuit profoundly altered the landscape of the electronics industry. Journalist Tom Wolfe has described that the milestone "made it possible to create miniature computers, to put all the functions of the mighty ENIAC [the earliest digital, programmable computer] on a panel the size of a playing card. Thereby the integrated circuit opened up every field of engineering imaginable, from voyages to the moon to robots, and many fields that had never been imagined[.]"[41] Fairchild's integrated circuit was widely preferred over its competitors' and thus catalyzed tremendous growth and profits for the company. Noyce became generator manager of Fairchild's microchip division and skillfully steered it as Fairchild moved into a phase of rapid staff recruitment and market expansion, leading the company to approach $200 million in annual sales.[42]

Despite his continued financial success and promotions at Fairchild, Noyce eventually tired of its corporate structure and his increasingly administrative role there. After more than a decade at the company, Noyce teamed with fellow Shockley and Fairchild veteran Gordon Moore and assembled more than $2 million in investor capital to establish a startup venture the pair ultimately named Intel Corporation (Intel for short). At first, Noyce and Moore kept their vision for Intel open-ended: they wished to develop technologies based in integrated circuits, but to focus on "product areas that none of the manufacturers are supplying."[43] Furthermore, the company did not focus its energies on new technological research but instead, as historian Ross Knox Bassett has written, "took a broad range of product concepts that were in the minds of knowledgeable people in the industry and quickly converted them into real products."[44] Upon the launch of its initial development phase, the Intel founders rented vacant office space in the Union Carbide Company's modest one-story building at 365 Middlefield Road in Mountain View (Figure 53) and hired a comparatively small crew of engineering and administrative staff. Perhaps the most notable engineer they recruited at this time was Andy Grove, a Hungarian émigré, Holocaust survivor, and future Intel chief operating officer (CEO) who had worked closely with Gordon Moore at Fairchild.[45]

[40] Michael S. Malone, *The Intel Trinity: How Robert Noyce, Gordon Moore, and Andy Grove Built the World's Most Important Company* (New York: Harper Business, 2014), eBook accessed electronically through the Multnomah County Library.
[41] Tom Wolfe, "The Tinkerings of Robert Noyce: How the Sun Rose on the Silicon Valley," *Esquire*, December 1983, accessed electronically, https://web.stanford.edu/class/e145/2007_fall/materials/noyce.html.
[42] Ibid.; Malone, *The Intel Trinity*.
[43] Quoted in Marge Scandling, "2 of Founders Leave Fairchild, Form Own Electronics Firm," *Palo Alto Times*, August 2, 1968, 6.
[44] Ross Knox Bassett, *To The Digital Age: Research Labs, Start-Up Companies, and the Rise of MOS Technology* (Baltimore: Johns Hopkins University Press, 2002), 209.
[45] Ibid.; Malone, *The Intel Trinity*.

Figure 53. Intel Corporation's original headquarters, housed in the building at 365 Middlefield Road in Mountain View, California, photographed in 1968
Source: Intel Corporation

During its first two years of business based in Mountain View, Intel quickly defined a workplace culture based on flexibility, technical acumen, and intensity. Strict hierarchies were shunned. The Intel founders promoted a model of product development that has defined the company for decades: continual and overlapping development efforts that all but depended upon the obsolescence of its previous semiconductor achievements. Sometimes the company had no market in mind for its products but instead prized the culture of innovation for its own sake. This model reflects the assumption that semiconductor technology would become ever more powerful, following Gordon Moore's observation—commonly known as Moore's Law—that semiconductor developers would be able to double the number of transistors per chip every twenty-four months.[46] The hypothesis supported an ethic of furious innovation. Years later, an Intel manufacturing manager summarized conditions at the company: "Working in Fab is like cycling through a revolving door. Just when you learn to build one product, a newer one with all its technical challenges needs to be manufactured—better, cheaper, and three months earlier than originally planned."[47]

As the 1960s ended, Intel staff operated under startup conditions as engineers swiftly began to develop new electronic product ideas in the building's fab (named Fab 1) on Middlefield Road, with a particular focus in the area of semiconductor memory (or data storage). The company's earliest efforts in this area brought forth the first Intel product, a static random access memory chip called the 3101. The chip's release was a milestone for the young company, but its true importance was the revenue stream it drew that fed Intel's other development efforts. The first product that put Intel on the map was the 1103 dynamic random-access memory chip, released in 1970. A single 1103 memory chip contained 4,000 transistors and functioned more efficiently than the ceramic cores that previously had been used to store computer memory. In large part due to the 1103 memory chip, Intel quickly became a force in the

[46] "Gordon Moore," Intel Corporation, accessed February 14, 2023, https://www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html.
[47] Quoted in Christine Finn, *Artifacts: An Archaeologist's Year in Silicon Valley* (Cambridge: The MIT Press, 2001), 10.

semiconductor industry: its 1970 revenue was $4 million, but by 1972 its yearly sales surpassed $20 million. In short order, the company already appeared to be accomplishing its new slogan: "Intel Delivers."[48]

While still occupying its space in Mountain View, Intel was courted by a Japanese calculator company, Busicom, with a proposition that fundamentally altered the realm of electronics technology. Busicom was in the process of developing a new electronic calculator line and requested that Intel design a central processing unit (CPU) comprising 12 separate chips. Intel engineers Stan Mazor, Ted Hoff, and Federico Faggin were assigned to the project, which was one of the company's major initiatives as it moved to its new purpose-built Santa Clara headquarters building in 1971. The team proposed a novel solution to meet Busicom's specifications: a series of only four chips, one of which was a four-bit CPU chip that incorporated multiple processing functions that previously were accomplished by separate chips. This approach increased processing speeds and reduced costs; furthermore, the chip was programmable, meaning a single chip design could be mass produced for varied applications. Technology historian Leslie Berlin describes the innovation in the following way:

> A programmable, general-purpose logic device, the microprocessor was revolutionary. Before, designers at customer firms had built their systems by choosing and connecting individual microchips, each with a different dedicated function, on a board. Changing the system required changing the physical arrangement of the chips, or hardware. Intel's new microprocessor systems required something very different—changes made not by moving physical objects but by reprogramming the instructions stored in program memory. The microprocessor, in other words, brought software to the semiconductor industry. In doing so, it placed new demands on customers, most of whom were experienced hardware designers but unfamiliar with using computer programs to solve their systems problems.[49]

The microprocessor chip that the team completed in a fab in the heart of SC1, called the Intel 4004, dramatically shrank the physical hardware required to process complex computing calculations: the 4004 could accomplish the same processing functions as the ENIAC, which filled an entire room. Intel secured an agreement with Busicom that allowed the American company to market the 4004 chip commercially for non-calculator applications, and it became the first microprocessor available on the consumer market when it was launched in 1971 (Figure 54). Although it had limited application at first, the 4004 paved the way for Intel's later industry dominance.[50]

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[48] Malone, *The Intel Trinity*; Wolfe, "The Tinkerings of Robert Noyce;" Berlin, *Troublemakers*, 73; "Explore Intel's History," Intel Corporation, February 9, 2023, https://timeline.intel.com/.

[49] Berlin, *Troublemakers*, 147.

[50] Wolfe, "The Tinkerings of Robert Noyce;" "Explore Intel's History;" "Intel: A Look Back on the Early Years," Intel Corporation, November 17, 2011, https://newsroom.intel.com/editorials/intel-a-look-back-on-the-early-years/; Michael Kanellos, "The Microprocessor Turns 40: Intel's Monumental Accident," *Forbes*, November 15, 2011, https://www.forbes.com/sites/michaelkanellos/2011/11/15/the-microprocessor-turns-40-intels-monumental-accident/.

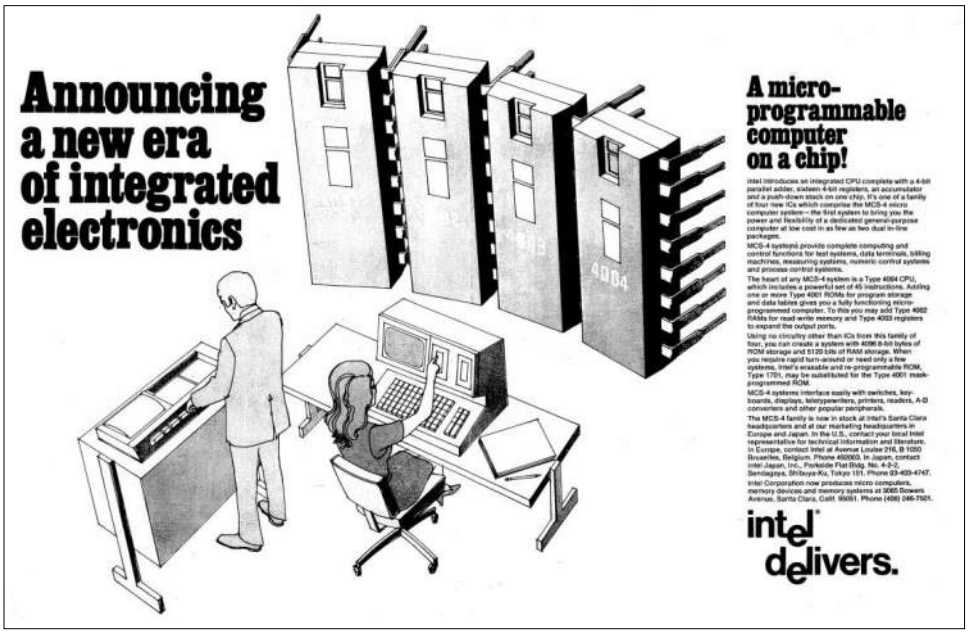


Figure 54. 1971 Intel advertisement announcing the launch of the CPU system, which included its groundbreaking 4004 microprocessor
Source: Intel Corporation

In several other respects, 1971 was a momentous year for Intel. The company released the first erasable programmable read-only memory (EPROM) chip, which could retain stored data after a power supply was shut off. It was the first year that Intel made a profit, and it had its initial public offering. Furthermore, Intel's relocation to its new headquarters in a predominantly undeveloped area near the edge of Santa Clara, at the same time as it developed its pioneering microprocessor chip, was a symbolic step away from Fairchild Semiconductor's sphere of influence in Mountain View (Figure 55). The new headquarters expanded the company's fab space and, by isolating it from its competitors, allowed Intel to focus on its company culture and growth. The campus also moved Intel further away from Mountain View's Wagon Wheel Bar, a popular watering hole for semiconductor engineers where trade secrets could be swapped, and where defections were planned.[51]

[51] Malone, *The Intel Trinity*; "Explore Intel's History;" Bassett, *To the Digital Age*, 201-202.

Figure 55. Noyce (left) and Moore standing in front of the newly constructed SC1, c.1971
Source: Intel Corporation

The release of the 4004 and construction of the Santa Clara headquarters confirmed Intel's status as a dominant presence in the semiconductor industry during the early 1970s, a mere few years after the company's founding. During the decade that followed, the company invested heavily to maintain and expand the dominance it had rapidly built. In 1972, Intel made its international manufacturing debut when it constructed an assembly plant in Malaysia. (In subsequent years, the company built other facilities abroad in countries such as the Philippines, Barbados, Singapore, and Israel.) In 1973, Intel opened a silicon wafer fabrication facility known as Fab 3 in Livermore, California, where the company introduced the head-to-toe white clean gowns, popularly known as "bunny suits," that became emblematic of its public brand identity almost twenty-five years later. Fab 3 was the first of many fabrication and assembly plants that the company ultimately built domestically, which expanded its physical footprint far beyond its nucleus in Santa Clara.[52]

In short order, Intel developed its second microprocessor, an eight-bit chip named the 8008: it was released in 1972, just four months after the 4004 had hit the market. The 8008 had 50% more transistors and was eight times as fast a processor as the 4004, so it represented a significant milestone of its own. According to journalist Michael S. Malone, however, it took time for potential customers in the military, aerospace, and industrial sectors "just to get their heads around the idea of a handful of chips replacing a wall of magnetic ring cores or a motherboard or two filled with logic and memory chips."[53]

Even as consumers slowly began to understand the microprocessor's potential, Intel continued to leap into new development efforts that built upon the company's earlier innovations. In particular, Federico Faggin envisioned a single microprocessor chip that combined the four chips that had supported each the 4004 and the 8008. That product, the Intel 8080, was completed in 1974 and offered far greater

[52] "Explore Intel's History;" Intel Corporation, *Thirty-Five Years*.
[53] Malone, *The Intel Trinity*.

versatility for consumers than Intel's first two microprocessors. As Faggin described it, "The 8080 really created the microprocessor market. The 4004 and 8008 suggested it, but the 8080 made it real."[54] Both the 8008 and the 8080 chips were released by Intel when 3065 Bowers Avenue was its primary product development and fabrication facility.

During the second half of the 1970s, Intel sailed through its ten-year anniversary. The company saw continued market supremacy in the semiconductor industry, largely supported by its innovative memory chips. Even so, microprocessors remained an important area of development. A sixteen-bit microprocessor, the 8086, launched in 1978 and offered ten times the processing power as the company's prior milestone, the 8080. The 8086 was notable as the first Intel microprocessor designed with the help of a computer. Another aspect that distinguished the 8086 from Intel's earlier microprocessors was that it utilized an architecture that more easily accommodated adaptation for future product generations, meaning Intel did not need to start from scratch when embarking on the design of a new and more powerful microprocessor. Even more, Intel initiated a well-funded marketing campaign, known as "Operation Crush," that heralded the 8086's performance capabilities and strengthened Intel's brand recognition.[55]

There remains little doubt that the most consequential result of the launch of the 8086 microprocessor, coupled with Operation Crush's public information bonanza, was Intel's successful bid in 1981 to provide microprocessors for IBM's first generation of commercially available PCs. Even as Intel's memory chip business faced growing competition and weakened market shares, the nascent but promising PC market created a viable pathway for Intel's continued industry relevance. IBM quickly captured a corner on the PC market by utilizing the Intel 8088, a lower-power and lower-cost variant of the 8086. After selling one million PCs in two years (then considered a tremendous success), IBM amassed a 15% stake in Intel by 1983. At the same time, Intel secured contracts with some of IBM's competitors in the PC market, such as Compaq. Furthermore, the adaptability of the 8086's architecture allowed Intel to develop the x86 family of three successive microprocessors: the 80286 (1982), i386/80386 (1985), and i486/80486 (1989). IBM incorporated all three into its subsequent PC models. The i486 was the first manufactured by Intel that contained more than one million transistors. As a result of Intel's technical advances and vigorous marketing efforts, its microprocessors were the acknowledged standard-bearer in the PC consumer market by the close of the 1980s.[56]

The flipside of Intel's microprocessor achievements, however, was its exit from the memory chip business. The company had continued to make advances in DRAM chips in the early 1980s, but by mid-decade Japanese manufacturers had entered the American market with chips priced so low that domestic producers struggled to compete. Intel made the decision to curtail its DRAM line in 1985, as did its competitor Texas Instruments. Intel's pivot away from this traditionally strong sector allowed it to place more energy into microprocessor development for PCs and supercomputing. Intel also made inroads with

[54] Quoted in "Explore Intel's History."
[55] Malone, *The Intel Trinity*.
[56] Robert Metz, "Intel Set To Rake in the Chips," *San Francisco Sunday Examiner & Chronicle*, November 20, 1983, D3; "Explore Intel's History."

application-specific integrated circuits, a type of customized chip that differed from Intel's general-use chips.[57]

Under the leadership of new CEO Andy Grove, Intel entered its third decade riding a wave of unprecedented sales that followed the semiconductor industry slump of 1985 and 1986. The company secured contracts with automobile makers that fueled some of its growth, but its series of increasingly powerful microprocessors ensured that Intel's success remained closely tethered to the exploding PC market. Among the company's most important developments of the 1990s was the launch of the Pentium line, which included new generations of the Intel x86 family. The original Pentium debuted commercially in 1993, followed by the Pentium Pro in 1995, the Pentium II in 1997, the Pentium III in 1999, and the Pentium 4 in 2000.[58]

Whereas Intel had been largely focused on high technology industries through the 1980s, highly effective brand strategies reoriented and expanded Intel's public profile. The company increasingly developed new products directly for the retail market, and it created engaging campaigns like "Intel Inside" in 1991 that explained processing for the layperson and strengthened brand loyalty among PC buyers. Intel's most memorable public imprint in the 1990s was likely its "Bunny People" advertising campaign, which debuted in 1997 alongside the Pentium II. To match the technological dynamism of the processor, television and print ads reimagined the company's white bunny-suited fab workers as candy-colored dancers boogying to a funk-music soundtrack (Figure 56). *Time* magazine's selection of Grove as its "Man of the Year" in 1997 further confirmed the high level of public recognition that Intel had earned in its nearly 30 years of doing business.[59]

Figure 56. The multi-colored, dancing "Bunny People" who appeared in Intel's Premium II advertisements during the late 1990s
Source: Intel Corporation

[57] Henry Schulman, "NEC Corp. Will Increase Chip Prices," *Oakland Tribune*, December 2, 1985, B1; "Explore Intel's History."
[58] "Explore Intel's History."
[59] Ibid.

True to Intel's adaptive nature, the company's twenty-first-century initiatives have enhanced computer processing capabilities and have developed new technologies for an evolving electronics industry. The turn-of-the-millennium dotcom bust brought a slump for tech companies worldwide, Intel included. However, Intel ably responded to emerging needs by pushing innovations in areas such as mobile computers, wireless networking, cloud computing, drone technology, and autonomous driving. Simultaneously, Intel continued to develop new Core processors that moved beyond the architecture of the Intel Premium in order to enhance the capabilities of PCs and supercomputers. Another of Intel's industry achievements in the twenty-first century was introducing the Ultrabook, a lightweight PC that married the benefits of traditional laptops and portable devices such as mobile phones and tablets. The sustained relevance of Intel's technological innovations is reflected in its annual revenues, which exceeded $70 billion in 2018.[60]

## 4.4 Architect Overview: Simpson, Stratta and Associates

Simpson, Stratta and Associates was a joint architecture, engineering, and planning firm founded by business partners and engineers Albert Simpson and James Stratta. The firm was active in the San Francisco Bay Area from 1952 until Simpson's death in 1976.

Albert T. Simpson was born on June 28, 1923 in San Francisco. Raised in Weaverville, he moved to the Bay Area to receive his graduate degree in civil engineering from Stanford University in 1948. Shortly after graduating, he enrolled in the American Society of Civil Engineers. In 1948, Simpson joined the structural engineering firm Hall & Pregnoff in Palo Alto. Pregnoff is known for creating the rating methodology for the University of California seismic risk mitigation policy, which is still used to this day.[61]

James L. Stratta was born on September 1, 1920, in Berkeley, and he remained in the Bay Area for the rest of his life. After graduating from Galileo High School in San Francisco in 1938, Stratta received his engineering education at the University of California at Berkeley. Shortly after graduating in 1943, Stratta began his career as a structural engineer. During World War II, he worked for the Ames Aeronautical Laboratory at Moffett Field outside of Mountain View. In 1947, he accepted a position with Hall and Pregnoff, where he met Albert Simpson.[62]

After working together at Hall & Pregnoff for nearly four years, Simpson and Stratta formed Simpson, Stratta and Associates in the early part of 1952. The firm operated until 1967 and held an office at 325 Fifth Street in San Francisco. In this time, the firm primarily was responsible for large-scale office parks, commercial buildings, and industrial facilities, including the Utah Construction & Mining Company South San Francisco Industrial Park (1961), General Mills' western operations headquarters in South San Francisco (1962), Alec Membership Shopping Center in Palo Alto (1962) and Signetics Corporation

[60] Ibid.

[61] US World War II Draft Cards Database, 1940-1947, Ancestry, accessed electronically, Ancestry.com; "Gets Scholarship," *The Shasta Courier*, January 1, 1948, 8; "Albert Simpson Enrolled in Engineer Society," *The Peninsula Times Tribune*, December 8, 1948, 20; U.S. City Directory Records Database, 1948, Ancestry, accessed electronically, Ancestry.com; "Michael Victor Pregnoff," Pacific Coast Architectural Database, accessed February 14, 2023, https://pcad.lib.washington.edu/person/2978/.

[62] US Federal Census Records, 1930, Ancestry, accessed electronically, Ancestry.com; "Engineers Pick Stratta," *San Francisco Examiner*, January 1, 1962, 63; "Atherton Man To Head Engineers," *The Times*, December 26, 1961, 13.

Complex (1964). Prior to their commission for the original Intel building at 3065 Bowers Avenue in Santa Clara, the firm designed a new headquarters for the National Semiconductor Company in Santa Clara's National Industrial Park (1969). Perhaps as a result of its technical expertise in structural engineering, the firm does not appear to have gained a reputation for stylistic innovation, and its projects convey broad modernistic influences.[63]

Simpson, Stratta and Associates also gained a reputation as a city planning firm and was responsible for the design of a master plan for the City of Folsom in 1964. The firm's portfolio also included extensive planning efforts in Israel and England, in addition to California cities such as Fairfield, Arcadia, and National City. By the early 1960s, the firm employed approximately 35 people.[64]

In the first years of running the firm, Stratta was also an adjunct professor at the University of California at Berkeley's School of Architecture from 1952 to 1954. Stratta was elected president of the Structural Engineers Association of Northern California in 1962 and served for many years. Throughout his career as a structural engineer, Stratta was regarded as an expert on earthquake resistant structural design.[65]

The firm operated until Simpson died unexpectedly in a 1976 fire at the St. Francis Yacht Club, at the age of 53. After Simpson's death, Stratta dissolved the firm and continued to work on his own as an independent consultant in Menlo Park. Stratta died in 1994 at the age of 73.[66]

## 4.5 Landscape Architect Overview: Royston, Hanamoto, Beck, and Abey

The landscape architecture firm that contributed to the design of the original Intel headquarters facilities at 3065 Bowers Avenue was Royston, Hanamoto, Beck, and Abey. The firm—and particularly its founder, Robert Royston—is recognized as a significant innovator in Modernist landscape design in Northern California after World War II. According to a biographical description prepared by the Environmental Design Archives at the University of California, Berkeley:

> Robert Royston began practicing architecture in the offices of Thomas D. Church on weekends while he was a student in the landscape architecture program at the University of California, Berkeley. He continued to work for Church following his graduation. After returning from military service during World War II, he opened a firm with Garrett Eckbo. Royston taught in the landscape program at UC Berkeley from 1947-1951, teaching students such as Fran Violich, Roy Hanamoto (who became his partner), and Francis Dean. Royston joined with a number of partners over the years, eventually establishing the firm of Royston, Hanamoto, Alley & Abey in 1979, where he worked until his semi-retirement in 1998.[67]

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[63] "Atherton Man to Head Engineers," 13; "Great Folsom Planning Area Plan 1985," *The Folsom Telegraph*, August 4, 1966, 3; "New Factory Started for Electronics Firm," *San Francisco Chronicle*, October 5, 1969, C.
[64] "Status Report: City Master Plan One Year Away," *The Folsom Telegraph*, August 13, 1964, 1; "FCAC Completes City Master Plan Report," *The Folsom Telegraph*, February 6, 1964, 1; "Atherton Man to Head Engineers," 13.
[65] "Engineers Elect," *San Francisco Chronicle*, December 27, 1961, 37; "SF Engineer to Head Association," *The Peninsula Times Tribune*, January 19, 1967, 6.
[66] "SF Yacht Club Fire; Three Persons Dead," *Napa Valley Register*, December 21, 1976, 1; "Hyatt Suits Total $1 Billion," *Record Searchlight*, August 8, 1981, 6.
[67] "Royston, Robert N.," Environmental Design Archives, University of California, Berkeley, accessed February 17, 2023, https://archives.ced.berkeley.edu/collections/royston-robert.

Over the course of Royston's career, his firm evolved through multiple changes in name and partnership structure. In 1962, Eldon Beck, who had joined the firm in 1958, became a partner and the firm was renamed Royston, Hanamoto, Mayes & Beck. In 1966, David Mayes left the firm to open his own practice, and the following year associate Kazuo Abey was made partner. Thereupon the firm name changed once again to Royston, Hanamoto, Beck & Abey (RHBA).

Notable RHBA projects include many private residences, including Eichler homes, long range development plans for the University of California Lawrence Livermore National Laboratory (1968), University of California San Francisco Medical Center (1965), University of California, Santa Cruz (1961), and the following campus buildings on the UC Santa Cruz campus: Merrill College (1965-67), Cowell Student Health Center (1967), Faculty Commons (1969-1971), and Quarry Area (Theatre) (1967). Royston is also known for public park projects, particularly in communities along the San Francisco Peninsula and in the Santa Clara Valley.[68] The firm continues today as RHAA.

## 4.6 Architectural Context: Late Modernism

Late Modernism is less an architectural style than a broad design movement that encompasses multiple related aesthetic directions that evolved out of, and in opposition to, early and more orthodox streams of modern architecture such as the Miesian International Style. Characterized broadly, Late Modernism reflects designers' perception that the earlier forms of modernism had become stale, endlessly copied, and oftentimes synonymous with corporate interests: thus, design professionals began to exaggerate and hyperbolize the traditional principles of modernism in order to enliven the design movement. Often, this involved design strategies that elicited responses such as humor, awe, confusion, and even disgust. More commonly applied to commercial and industrial building types than to residences, Late Modernism purposefully eschewed ideal proportions, strict minimalism, cubic forms, and (in some instances) established standards of good taste.

American architectural historian and critic Charles Jencks was among the first writers to characterize Late Modernism in architectural design, which began to emerge as a recognizable movement in the mid-1960s. One of Jencks's key contributions was differentiating Late Modernism from the separate but related movement of Postmodernism. Proponents of Late Modernism "have, for the most part, taken the theories and style of their precursors to an extreme and in so doing produced an elaborated or mannered Modernism. By contrast Post-Modernists have modified the previous style, while building upon it, but in additional also rejected the theories almost completely."[69] In other words, Postmodernism combined Modernist influences with elements signifying earlier architectural trends (i.e., Classicism), whereas Late Modernism isolated the DNA of Modernism but "mutated" it into something identifiably different. Like orthodox forms of modernism before it, however, Late Modernism produced a vocabulary that ultimately was widely adopted and subsequently regarded as mainstream.

Jencks was partial to sometimes perplexing neologisms to refer to the various impulses he identified in Late Modernism, including Second Machine Aesthetic, Extreme Articulation, Forced Harmonization,

[68] MacKenzie Bennett, Meredith Hall, and April Hesik, "Inventory of the Robert N. Royston Collection, 1941-1990," Environmental Design Archives, University of California, Berkeley, accessed February 22, 2023, https://oac.cdlib.org/findaid/ark:/13030/kt8b69q7nx/entire_text/.
[69] Charles Jencks, *Late-Modern Architecture* (New York: Rizzoli, 1980), 10.

Structure/Construction as Ornament, Elliptical Gridism, and Slick Skin/Op Effects.[70] Regardless of the exact terms used to describe them, examples of Late Modern architecture often feature the curtain wall envelope, compositional rigor, and/or stylistic austerity that characterize orthodox Modernism. However, Late Modernism typically avoided the International Style's perfect proportions, ideal cubic volumes, pristine surfaces, and sense of floatation. In contrast, the concepts that characterize Late Modernism include material experimentation, unconventional fenestration patterns, extreme repetition, and exaggerated or highly sculptural massing. A more recent overview of Late Modernism in California has simplified the movement into three primary categories: Glass Skin, Brutalism, and High Tech. Good examples in these categories are likely to have some or all of the broad character-defining features listed below.

*Glass Skin*

- Typically displays bold, sculptural forms, often with chamfers or cut-outs;
- May have sharply articulated angles and distinctive geometric forms;
- Smooth, continuous surfaces over the primary massing or entirety of the building;
- Usually rendered in a single monochromatic palette or material;
- Glass skin encloses building in an all-over manner, or in certain instances set upon a base or plinth of a different material;
- Glass skins are typically of reflecting or mirrored glass paired to smooth grids mullions and muntins;
- Later glass skins may exhibit seamless neoprene glazing with no aluminum mullions or muntins visible;
- Window or door articulation may be subsumed into distinctive cladding or distinctive shape.

*Brutalism*

- Typically displays bold oversized angular shapes with sculptural and distinctive geometric forms to break apart the rectangular form;
- Unpainted exposed concrete, raked or smooth, dominating visible elevations.

*High Tech*

- Metal and glass exterior with a limited color palette of white, black, or grey;
- Artistically treated, deliberately exposed structural and infrastructural components (escalators, elevators, air ducts, structural systems) which may be painted in bright colors.[71]

# 5. Evaluative Framework

## 5.1 California Register of Historical Resources

The California Register of Historical Resources (California Register) is the official inventory of the state's significant historical and archeological resources. It serves to identify, evaluate, register, and protect California's historical resources. The California Register program encourages public recognition and protection of resources of architectural, social, cultural, and/or archeological significance, identifies

[70] Ibid., 31-79

[71] Daniel Paul, *Los Angeles Citywide Historic Context Statement: Late Modern, 1966-1990*, SurveyLA: Los Angeles Historic Resources Survey, prepared for City of Los Angeles Office of Historic Resources, July 2020, 35-40.

significant resources for state and local planning purposes, determines eligibility for historic preservation grant funding, and affords certain protections under the California Environmental Quality Act. All resources listed in or formally determined eligible for the National Register of Historic Places,[72] as well as California Historical Landmarks with designation numbers above 770, are automatically listed in the California Register.

### *Significance Criteria*

The California Register criteria are modeled on the National Register criteria for eligibility. A resource must be significant at the local, state, or national level under one or more of the following criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. It is associated with the lives of persons important to local, California, or national history.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, state or the nation.

Like the National Register, California Register eligibility requires that a built environment resource have demonstrated significance under Criteria 1, 2, and/or 3 before integrity is considered. Criterion 4 most often applies to archaeological sites and allows that a resource may have significant information value despite diminished integrity.

### *Integrity*

For a property to qualify under the National Register's Criteria for Evaluation, it must also retain "historic integrity of those features necessary to convey its significance."[73] While a property's significance relates to its role within a specific historic context, its integrity refers to "a property's physical features and how they relate to its significance."[74] The California Register retains the National Register's integrity requirement.

Since integrity is based on a property's significance within a specific historic context, an evaluation of a property's integrity can only occur after significance has been established. To determine if a property retains the physical characteristics corresponding to its historic context, the National Register has identified seven aspects of integrity:

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[72] The National Register was established by the National Historic Preservation Act of 1966 and is the United States' federal register of significant built environment and archaeological resources nationwide. Listings in the National Register and California Register are not mutually exclusive; each designation bestows its own review processes and protections based on applicable federal and state laws, respectively.

[73] National Park Service, *How to Apply the National Register Criteria for Evaluation*, accessed February 21, 2023, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

[74] Ibid.

*Location* is the place where the historic property was constructed or the place where the historic event occurred.

*Setting* is the physical environment of an historic property.

*Design* is the combination of elements that create the form, plan, space, structure, and style of a property.

*Materials* are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form an historic property.

*Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

*Feeling* is a property's expression of the aesthetic or historic sense of a particular period of time.

*Association* is the direct link between an important historic event or person and an historic property.

# 6. Evaluation

## 6.1 California Register of Historical Resources

An evaluation of the subject property for individual significance under each California Register criterion is presented below.

### *California Register Criterion 1 [Association with Significant Events]*

To be considered eligible for listing under Criterion 1, a property must be associated with one or more events important in a defined historic context. This criterion recognizes properties associated with single events, a pattern of events, repeated activities, or historic trends. The event or trends, however, must clearly be important within the associated context. Further, mere association of the property with historic events or trends is not enough, in and of itself, to qualify under this criterion: the specific association must be considered important as well.[75]

During the several decades that followed Intel Corporation's establishment in 1968, the company became an influential mainstay in the semiconductor and microelectronics industries and has supported major developments in multiple technology sectors, including the proliferation of PCs through its contracts with IBM and other manufacturers. Based on the work of historians and technology journalists, there appears little debate about Intel's importance within the context of Silicon Valley's development and the growth of the high technology sector worldwide during the post-World War II era: Ross Knox Bassett has written that Intel held the position of most important semiconductor manufacturer from its founding until at least the turn of the twenty-first century.[76] Experts in electronics have established Intel's significance by describing its pathbreaking technological advances and detailing the number of innovative and increasingly complex products that the company released continually since the turn of the 1970s. These

[75] National Park Service, *How to Apply the National Register Criteria for Evaluation*.
[76] Bassett, *To the Digital Age*, 167.

innovations led to very rapid growth and enormous financial success for Intel, quickly bringing industry-wide recognition for its impactful product advances.

SC1, the initial building constructed within the campus at 3065 Bowers Avenue, was completed just a few years after the company's founding and operated as Intel's first purpose-built administrative headquarters and manufacturing facility after the company outgrew its original leased space in Mountain View. SC1 was emblematic of Intel's swift growth, which justified a larger headquarters and customized fabrication space. A fab within SC1 was where Intel engineers developed the world's first microprocessor, the Intel 4004, for its market launch in 1971. Over the next several years, the building served as Intel's headquarters as the company maintained its industry dominance in memory chips while continuing to reach microprocessor milestones with the release of the Intel 8008, 8080, and 8086. The last of these established the architecture for several generations of microprocessors that were instrumental in the proliferation of PCs during the 1980s and 1990s. By the time Intel moved to a new headquarters complex in 1992, the company had become a highly regarded pillar in the computing industry and was enjoying widespread brand recognition among members of the general public. Given that 3065 Bowers Avenue was Intel's headquarters and a core fabrication space for more than 20 years of market growth and technological innovation, the property is directly associated with Intel's role making computing a part of daily life around the globe. For these reasons, the property appears to have national-level significance under California Register Criterion 1.

### *California Register Criterion 2 [Association with Significant Persons]*

This criterion "applies to properties associated with individuals whose specific contributions to history can be identified and documented." It identifies properties associated with individuals "whose activities are demonstrably important within a local, State, or national historic context," and is typically limited to those properties that have the ability to illustrate a person's important achievements.[77]

In consideration of Intel Corporation's historical importance, as established above under Criterion 1, the company has employed many professional engineers and administrators who have made distinguished contributions to the semiconductor industry and broader technology sector. Such individuals include: Robert Noyce and Gordon Moore, Intel co-founders and CEOs from 1968-1975 and 1975-1987, respectively; Andy Grove, Intel CEO during a momentous period of growth from 1987 to 1998; Federico Faggin, engineer who played a key role in developing Intel's groundbreaking microprocessors; and Dov Frohman, inventor of EPROM. These notable figures at Intel have been recognized individually for their scientific and industry accomplishments; for instance, Moore was awarded the National Medal of Technology and Innovation in 1990, and Grove was recognized as "Man of the Year" by *Time* magazine in 1997. However, the campus at 3065 Bowers Avenue is not a property type that is most apt to convey the accomplishments of a limited number of people, given that the significant pattern of events that took place there resulted from prolonged and successive product development efforts that involved the contributions of many employees rather than just a few. The importance of Noyce, Moore, Grove, and others in building the considerable influence of Intel within the semiconductor industry is best recognized by Criterion 1 significance. Therefore, the property does not appear to have significance under Criterion 2.

[77] National Park Service, *How to Apply the National Register Criteria for Evaluation*.

*California Register Criterion 3 [Architectural, Design, and Construction Significance]*

This criterion applies to properties that "embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction." "Distinctive characteristics" are the physical and design features that commonly recur in individual types, periods, or methods of construction. To be eligible, a property must clearly contain enough of those characteristics to be considered a true representative of a particular style. A master "is a figure of generally recognized greatness in a field, a known craftsman of consummate skill, or an anonymous craftsman whose work is distinguishable from others by its characteristic style and quality…. A property is not eligible as the work of a master, however, simply because it was designed by a prominent architect."[78]

The architectural designs of both SC1 and SC2 have elements of the broad Late Modern stylistic movement, which strove to advance the core tenets of orthodox Modernism utilizing a range of approaches that typically involve exaggeration and hyperbole. SC1 (1971) and SC2 (1974) have related design strategies that suggest Late Modern influences: specifically, both facilities have reverse-stepped massing, large expanses of opaque wall surface, and horizontal bands of dark-tinted glass. SC2 utilizes these elements in a more exaggerated fashion, whereas SC1 suggests brutalism through its use of concrete—particularly at the structural columns that rise to the roofline as shaped pilasters. SC1 and SC2 may express elements of the Late Modern movement through their austere façade designs and material palettes, but neither volume fully embodies Late Modernism to the extent that would bestow California Register eligibility under Criterion 3. They are relatively simple interpretations of Late Modern architectural vocabulary, and neither exaggerates massing, façade articulation, or use of materials in a manner that is remarkable or surprising. The designs of SC1 and SC2 allowed them to function as industrial facilities, but as a result both have a relatively utilitarian aesthetic quality that limits their architectural interest. For these same reasons, neither SC1 nor SC2 has high artistic value.

Furthermore, the firm responsible for designing SC1—Simpson, Stratta and Associates—appears to have specialized in similar administrative, industrial, and commercial projects, many of which were similarly unremarkable. The firm's work was not widely covered in the press, and its founders were trained in structural engineering—such that it does not appear the firm was recognized for a notable stylistic viewpoint. Although the founders of Simpson, Stratta and Associates were capable professionals and were actively involved in their field, the firm does not appear to qualify as a master architecture firm. Research has not identified the designer(s) responsible for SC2, but its design is not a sufficiently inventive reworking of Modernist design principles that would suggest it as a good example of a master architect's body of work.

RHBA, the landscape architecture firm selected to design the landscape surrounding SC1 upon its construction from 1970-1971, is widely recognized for its considerable influence on modern landscape design in California. Although RHBA was involved in the Intel project, however, it does not appear that the firm's landscape design has high merit when viewed within the firm's body of work. Available photographs and aerial views of the campus during the 1970s indicate RHBA's design introduced generally curvilinear curb lines and pedestrian paths, custom-designed light standards, trees lined along

[78] National Park Service, *How to Apply the National Register Criteria for Evaluation*.

SC1, granite paving, and low shrubs and ground covering plants. The character of the landscape was spare and generally Modernist but does not appear to have been an innovative use of plant materials, circulation, and hardscaping. Rather, the landscape appears consistent with the corporate nature of SC1 and had limited artistic merit. Considered together, the architecture and landscape architecture of the site represent a relatively modest example of post-World War II corporate campus design that lacked an inventive site layout, or impactful use of landscape elements. Additionally, subsequent construction surrounding SC1 has removed some the original RHBA landscaped elements, such as the original light standards and some circulation paths.

Lastly, Main Fab and all surrounding support facilities were constructed after the mid-1990s and are utilitarian in nature; many smaller buildings appear to be prefabricated. None of the buildings and structures built within the property subsequent to SC2 has any architectural elements that associate it with a particular design movement or style or suggests design mastery.

For these reasons, no facility within the property appears to meet the significance threshold established by Criterion 3.

### *California Register Criterion 4 [Potential to Yield Information]*

Criterion 4 pertains to the potential for a resource to provide information on pre- and/or post-contact history and is generally applied to archaeological resources. In consideration of this criterion, no facility located at 3065 Bowers Avenue appears to fill a known data gap or research questions related to the history of Intel and the semiconductor industry that is not otherwise detailed in available primary and secondary historical sources. Therefore, the property does not appear to have significance under Criterion 4.

### *Historic District Potential*

3065 Bowers Avenue contains numerous built components that include SC1, SC2, Main Fab, and numerous auxiliary facilities and FSE. With the exception of SC1 and SC2, no elements of the property appear to date to the identified 1971-1992 period of significance and therefore do not have a direct and meaningful association with the property's historically significant use as the Intel headquarters and a key fabrication facility. Therefore, 3065 Bowers Avenue is best characterized as an individual resource for the purpose of California Register eligibility: SC1 and SC2 are physically joined and together have a closely related development history and association with Intel's operations. Subsequent construction on the property postdates Intel's relocation to its new headquarters building in 1992, and therefore the property does not appear to contain a significant entity more than 45 years old that would be best characterized as a historic district.

## 6.2 Period of Significance

The period of significance for 3065 Bowers Avenue, associated with its Criterion 1 significance, spans from 1971 to 1992. This period begins with Intel's completion of SC1 at 3065 Bowers Avenue, at which point the company was already becoming established in the semiconductor industry for its memory chips and was actively working on the development of the pioneering microprocessor that it released as the Intel 4004. The period of significance ends with the completion of a new Intel headquarters campus on Mission College Boulevard, at which time the company moved its core administrative functions from the

Bowers Campus. During this period, key components of the 4004 were developed within a fab space in SC1, and Intel built SC2 to expand its product development and fabrication capabilities to match its growing industry stature. During the years it was headquartered on Bowers Avenue, Intel continued to gain considerable influence in the technology sector and rapidly developed new semiconductor-based products that powered far-reaching advances in multiple technological spheres.

Intel's considerable industry influence has continued into the twenty-first century, but the Bowers Campus lacked a direct associative connection to the company's product advances after the company relocated its headquarters to the Mission Campus in 1992. After this time, the Bowers Campus became just one of many facilities located in the United States and abroad that supported Intel's many product development efforts, and SC1 and SC2 do not appear to have had special status in the eyes of the company.

Although the period of significance ends approximately thirty years prior to the date of this evaluation, the property still meets the significance threshold of the California Register that pertains to the recent past: that is, a resource "less than fifty years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance."[79] This contrasts with the requirements of the National Register, which requires that significance less than 50 years old must be deemed *exceptional* in order to support eligibility. Over the past thirty years, Intel's history and industry influence have been the subject of close study by historians of science and technology, as well as by journalists. Some of the key academic and journalistic works that describe Intel's historical significance are cited in this report, including Michael Malone's *The Intel Trilogy*, Leslie Berlin's *Troublemakers*, and Ross Knox Bassett's *To The Digital Age*. Based on the wealth of sources now available on the history of Silicon Valley and the semiconductor industry from the 1960s into the twenty-first century, it is already possible to understand the significant associations of 3065 Bowers Avenue during the entire period it housed Intel's headquarters from 1971 to 1992.

## 6.3 Integrity Assessment

An assessment of 3065 Bowers Avenue's integrity is presented below, relative to its Criterion 1 significance and 1971-1992 period of significance. This assessment focuses on SC1 and SC2, the two building volumes constructed within the property during the period of significance.

### *Location*

None of the extant elements of the property at 3065 Bowers Avenue dating to the 1971-1992 period of significance appear to have been moved from their original locations within the parcel at the intersection of Bowers Avenue and Central Expressway.

Therefore, the property retains high integrity of location.

[79] California Office of Historic Preservation, *California Register and National Register: A Comparison (for the purposes of determining eligibility for the California Register), Technical Assistance Series #6* (Sacramento: California Department of Parks and Recreation, n.d.), accessed February 17, 2023, http://ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf.

*Setting*

At the time of SC1 and SC2's construction during the first half of the 1970s, 3065 Bowers Avenue was a relatively remote outpost near the edge of Santa Clara surrounded by little other low-density development. However, the fabric of suburban Santa Clara County quickly spread and surrounded the property, so that by the end of the period of significance (1992) 3065 Bowers Avenue contributed to a continuous spread of commercial and industrial development that reached as far north as San Francisco Bay. There appears to have been some continued change in the close vicinity of the property since 1992, including the construction of new three- to four-story buildings immediately to the east along Coronado Drive. However, the property's setting is still characterized by a suburban landscape of detached commercial and industrial buildings surrounding by surface parking lots, limited vegetation, and automobile roadways (including Central Expressway).

Therefore, the property retains moderate integrity of setting.

*Design*

The design of 3065 Bowers Avenue has undergone numerous alterations during and subsequent to the property's period of significance. Although SC1 (1971; Simpson, Stratta and Associates) is the original volume constructed within the property, SC2 (1974; designer not determined) was built only a few years later and similar contributed to the historically significant accomplishments of Intel's early period of growth. These two volumes, joined by a hyphen, are the components of the property that date to the period of significance; both express a Late Modern architectural aesthetic characterized by reverse-stepped massing, as well as the use of concrete, metal panels, and dark-tinted glass to create distinctive façade compositions. The property also originally incorporated a subdued, generally Modernist landscape designed by influential landscape architecture firm RHBA: the landscape was characterized by curving curb lines and pedestrian paths, limited plantings of trees and shrubs, grass lawns, and areas of granite paving.

Major alterations to the exterior of SC1 and SC2 after 1992 include the construction of Main Fab adjoining the south façade of SC2 and the immense volume of FSE and loading areas built adjacent to both early building volumes. Despite many alteration campaigns, however, the original designs of SC1 and SC2 remain discernible. The installation of FSE at the exterior of SC1—as well as the construction of two new entrances at the volume's west façade—appears primarily to have utilized existing openings within the window bands and has not permanently removed features that are not still present across other façades. Similarly, the south and east façades of SC2 now feature numerous attached volumes and equipment, but the volume's primary massing and exterior appearance remain visible (particularly at the north and west façades). New volumes and equipment are clearly differentiated from the original volumes. Components of the original landscape design have been removed, but enough trees and planting areas immediately adjacent to SC1 and SC2 remain to contribute to the campus's 1970s design character.

The interiors of both SC1 and SC2 have been changed repeatedly for Intel's continued product development efforts. It appears that very few, if any, of the interior fab spaces remain from the period of significance. However, the property's significance relates to a long series of industry accomplishments associated with the property rather than to a single innovation developed in a particular interior space. Therefore, the repeated reconfigurations to the interiors of SC1 and SC2 does not detract adversely from the integrity of design: Intel has operated in the spirit of ongoing, intense innovation since the company's founding in 1968, and the changes to the property reflect that same ethos.

For these reasons, the property retains moderate integrity of design.

### *Materials*

The original material palettes of SC1 and SC2 are still recognizable. The installation of FSE and new facilities across the property has involved the removal of some exterior and interior fabric, but the exterior envelopes of both SC1 and SC2 are generally intact. SC1 retains its characteristic concrete pilasters and base tier, metal spandrel and frieze panels, and window bands; SC2 retains large expanses of metal panel walls and window bands. Visual inspection of the property did not identify any discernible exterior alteration that eliminated a particular material entirely, but rather all exterior materials are present across other façades. These material palettes continue to express the characteristics of a corporate headquarters and fabrication facility dating to the 1970s.

Therefore, the property retains moderate integrity of materials.

### *Workmanship*

Similar to its materials, the workmanship of the property has undergone some changes through the construction of adjacent building volumes after the period of significance. However, later construction and equipment all expresses a utilitarian character that supports the modern workmanship of the early building volumes, SC1 and SC2.

Therefore, the property retains moderate integrity of workmanship.

### *Feeling*

3065 Bowers Avenue retains aspects of its historic feeling: in particular, SC1 and SC2 have extant Late Modern design elements and a suburban setting that express the qualities of a high-technology corporate facility from the early era of Silicon Valley's growth in the 1950s through 1970s. Although the post-1992 alterations to the property detract somewhat from its feeling as the administrative headquarters of Intel, the many additions of new building volumes and FSE reinforce the property's historically significant role in innovative product development for the semiconductor industry.

Therefore, the property retains moderate integrity of feeling.

## *Association*

Integrity of association refers to the direct link a property holds with its historical or architectural significance. Although alterations to the property have diminished its various aspects of integrity to a degree, its integrity of association is supported by a sufficient degree of materials, setting, design, workmanship, materials, and feeling that date to the period of significance. 3065 Bowers Avenue retains aspects of its early corporate architecture, landscape architecture, and highly technical use so that the property remains directly linked to the accomplishments of Intel from 1971 to 1992.

Therefore, the property retains moderate integrity of association.

## *Integrity Summary*

The analysis presented above concludes that 3065 Bowers Avenue retains at least a moderate degree of all seven aspects of its integrity. Although the two buildings dating to the period of significance, SC1 and

SC2, have been altered numerous times through the construction of new volumes and associated FSE, this assessment finds that the alterations have not yet rendered the property unable to express its broad corporate and manufacturing character from the period 1971-1992. Because the property is significant for its association with significant events, its evaluation may utilize an integrity test proposed by the National Park Service: whether "a historical contemporary would recognize the property as it exists today."[80] In light of the considerable amount of original fabric that exists at the exterior of SC1 and SC2, it is highly likely that employees of Intel and other observers familiar with the property during its period of significance would be able to identify 3065 Bowers Avenue in its current form.

For these reasons, this evaluation finds that 3065 Bowers Avenue retains sufficient overall integrity to convey its significance under Criterion 1 for its period of significance of 1971-1992. Therefore, the property is eligible for listing in the California Register as an individual resource.

## 6.4 Character-Defining Features

A character-defining feature is an aspect of a built resource's design, construction, or details that is representative of its function, type, or architectural style. Generally, character-defining features include specific building systems, architectural ornament, construction details, massing, materials, craftsmanship, site characteristics, and landscaping built or installed within the period of significance. In order for an important historical resource to retain its significance, its character-defining features must be retained to the greatest extent possible.

Character-defining features of 3065 Bowers Avenue include those dating to the 1971-1992 period of significance and include the following:

- Site
  - Property location at the intersection of Bowers Avenue and Central Expressway;
  - Location of SC1 and SC2 near the center of the parcel;
  - Visual primacy of SC1 and SC2 within the property;
  - Extant original landscaped elements, including granite pavers, pedestrian circulation paths, curvilinear curblines, and planting beds adjacent to the north, west, and south façades of SC1 and the north façade of SC2 (vegetation not original);
  - Orientation of SC1 and SC2 facing surface parking lots to the north;

- SC1
  - Rectangular plan and reverse-stepped massing with flat roof;
  - Late Modern architectural design consisting of horizontal tiers;
  - Two-story height with basement;
  - Partially excavated and exposed basement level;
  - Shaped concrete support columns that transition to pilasters;
  - Concrete base tier;
  - Grooved metal panel cladding at the spandrel and frieze;
  - Bands of tinted windows held in anodized aluminum frames;

[80] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 48.

- Entrances at the north and south façades featuring concrete landing platforms, steps, support columns, and canopies clad in grooved metal panels;
- Presence of interior corridors providing access to technical fabrication spaces (although configuration and finishes have been altered);

- SC2
  - Rectangular footprint and reverse-stepped massing with flat roof;
  - Late Modern architectural design;
  - Two-story height;
  - Predominant use of metal panel cladding, arranged as broad opaque horizontal bands;
  - Narrow horizontal ribbons of angled, tinted windows held in aluminum frames;
  - Recessed, fully glazed entrance vestibule at north façade with concrete landing;
  - Hyphen connection to SC1 with fully glazed curtain walls and shaped concrete supports; and
  - Presence of interior corridors providing access to technical fabrication spaces (although configuration and finishes have been altered).

The character-defining features of the property do not include Main Fab, equipment yards and fences/walls, various forms of FSE, or other support facilities located adjacent to SC1 and SC2. Furthermore, the configuration of surface parking lots within the parcel dates to the period of significance and generally supported Intel's use of the site, but it was not central to the significant use of the building or directly associated with the specific design features that identify the property as Intel's headquarters.

## 7. Impact Assessment

Because the preceding evaluation finds 3065 Bowers Avenue to be eligible for listing in the California Register, the property qualifies as a historical resource for CEQA review. This section presents an assessment of the proposed project's impacts to the resource pursuant to the requirements of CEQA.

### 7.1 California Environmental Quality Act

When a proposed project may cause a substantial adverse change in the significance of a historical resource, CEQA requires the lead agency to carefully consider the possible impacts before proceeding (Public Resources Code Section 21084.1) and to disclose its decision-making process. CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (Section 21084.1). CEQA explicitly prohibits the use of a categorical exemption within the CEQA Guidelines for projects that may cause such a change (Section 21084). CEQA Guidelines section 15064.5(b) defines a "substantial adverse change" in the significance of a historical resource as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Further, the significance of a historical resource eligible for listing in the California Register is "materially impaired" when a project "demolishes or materially alters in an adverse manner" the physical that "convey its historical significance and that justify its eligibility for inclusion in, or eligibility for inclusion in the California Register."

## 7.2 Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior is responsible for establishing standards for all programs under departmental authority and for advising federal agencies on the preservation of historic properties listed in or eligible for listing in the National Register. The Standards for Rehabilitation (Standards; codified in 36 CFR 67 for use in the Federal Historic Preservation Tax Incentives program) address the most prevalent treatment. "Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."[81]

Initially developed by the Secretary of the Interior to determine the appropriateness of proposed project work on registered properties within the Historic Preservation Fund grant-in-aid program, the Standards for Rehabilitation have been widely used over the years, particularly to determine if a rehabilitation qualifies as a Certified Rehabilitation for federal tax purposes. In addition, the Standards have guided federal agencies in carrying out their historic preservation responsibilities for properties in federal ownership or control and state and local officials in reviewing both federal and nonfederal rehabilitation proposals. They have also been adopted by historic preservation and planning commissions across the country.

The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The Standards pertain to historic properties of all materials, construction types, sizes, and occupancy and a building's site, environment, and associated landscape features, as well as attached, adjacent, or related new construction. As stated in the definition, the treatment "rehabilitation" assumes that at least some repair or alteration of the historic building will be needed in order to provide for an efficient contemporary use; however, these repairs and alterations must not damage or destroy materials, features or finishes that are important in defining the property's historic character.

The ten Standards for Rehabilitation are:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

[81] Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (Washington, D.C.: National Park Service, 2017), 76.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

As described in the CEQA Guidelines, a project that conforms with the Secretary of the Interior's Standards can generally be considered to cause a less than significant impact to historical resources (14 CCR § 15126.4(b)(1)). In most cases, a project that meets the Secretary of Interior's Standards can be considered categorically exempt from CEQA (14 CCR § 15331).[82]

## 7.3 Impact Assessment Methodology

To assess the CUB project's impacts to historical resources for the purposes of CEQA review, ARG staff reviewed the following: a draft project description for the CUB project provided by DJPA to ARG on February 9, 2023; revised language regarding the proposed recycled water pipeline provided on June 27, 2023; preliminary project renderings prepared by Twinsteps Architecture; a conceptual recycled water utility plan prepared by Tetra Tech and Glulam; and water pipeline trestle renderings prepared by Twinsteps Architecture. Select project renderings are attached to this HRTR as Appendix D. Because the CUB project qualifies as a rehabilitation, the analysis first presents an assessment of the project's compliance with the Standards for Rehabilitation. If the project is found to comply with the Standards for Rehabilitation, no further analysis is necessary because the impact to built environment historical resources is presumed to be less than significant for CEQA. However, if the project is found not to comply with the Standards for Rehabilitation, further analysis is required to determine whether the project would cause material impairment to the significance of historical resources.

## 7.4 Project Description

The project proposes to redevelop an approximately 1.3-acre portion of the campus, which currently consists of paved surface parking and landscaped areas, with an up to 17,000-square foot Central Utility

[82] California Office of Historic Preservation, "California Office of Historic Preservation, Technical Assistance Series #1, California Environmental Quality Act (CEQA) and Historical Resources," 2001, accessed February 21, 2023, https://ohp.parks.ca.gov/pages/1054/files/ts01ca.pdf.

Building (CUB) (Figure 57 and Figure 58). The CUB structure would have a ground-level footprint of approximately 14,200 square feet with an additional 2,800 square feet of mechanical penthouse at the roof level, for a total building area of up to 17,000 square feet. The CUB would have a height of up to 50 feet to the top of parapet.

Figure 57. Rendering of the north and west façades of the CUB, viewed facing southeast; SC1 appears at left, to the east of the CUB
Source: Twinsteps Architecture

Figure 58. Rendering of the CUB, as seen from an elevated viewpoint facing northeast; SC1 is visible to the east
Source: Twinsteps Architecture

The proposed CUB would serve the existing and planned equipment at the SC1 cleanroom facility that is located within the central southwestern portion of the site, directly adjacent to the proposed CUB. The SC1 cleanroom is utilized for the manufacture of microchips and other materials in a controlled

environment. The CUB would house a chiller area, pumps, brine containment, generator yard, electrical substation/battery storage room, and mechanical equipment. The CUB would also include an approximately 175 square foot office area to be utilized by engineering and maintenance staff.

Individual components of the CUB are described in greater detail in the following subsections:

### *Chillers, Pumps, and Cooling Towers*

The CUB would house three ground-level chillers each with 1,300-ton refrigeration capacity and associated pump and controls. Additionally, the project would include three cooling towers, each consisting of two cells, for a total of six cells. Only two cooling towers would operate at full capacity (4,000 hours per year) while the third cooling tower would be redundant and used in the event one of the towers fails. The cooling towers and an approximately 2,800 square foot electrical penthouse would be located on the roof level.

### *Generator Yard*

Two 2.8-megawatt (MW) diesel-fueled generators would be located within an enclosed, exterior generator yard. The generators would provide 5.6 MW of backup power. Each generator would be housed within a generator enclosure for security purposes and to reduce noise emissions.

The backup generators would be run for short periods for testing and maintenance purposes and otherwise would not operate unless a disturbance or interruption of the utility supply occurs. BAAQMD's Authority to Construct and the California Air Resources Board's Airborne Toxic Control Measures (ATCM) limits each engine to no more than 50 hours annually for reliability purposes (i.e., testing and maintenance). The generators would be tested for 30 minutes on a monthly basis.

The generators will have a fuel tank within the generator enclosure with leak detection and spill containment under the fuel filter. The backup generators will use ultra-low sulfur diesel as fuel (<15 parts per million sulfur by weight). The generators would have a combined diesel fuel storage capacity of approximately 3,000 gallons, which is sufficient to provide more than 24 hours of emergency generation at full electrical worst-case demand of the facility.

### *Electrical Substation/Battery Storage*

The project proposes a substation system to provide power to the CUB. This substation would be located in a dedicated, ventilated electrical room on the roof level. Each end would be comprised of a 4,150KVA, fan-cooled, 12KV to 480V transformer, a 480V, 5000A secondary main breaker and distribution circuit breakers. The maximum overall load in the building would be approximately 6MVA.

The room containing battery storage will house three 1250KW, lead-acid battery systems with exterior access and will be monitored and ventilated and spaced per code requirements. The room would be two-hour fire rated and each set of two battery cabinets would be separated from each other and the wall by three feet of spacing. The overall battery system would be composed of two 1250KW systems with a redundant third system. These UPS systems will provide uninterrupted power to the CUB.

*Site Access and Parking*

Access to the site would be provided via an existing two-way driveway on Bowers Avenue. The project proposes to retain nine parking spaces in the existing surface parking lot to serve the proposed project. The proposed CUB will serve and be part of the existing Bowers Campus operations; however, the project will not generate new employees or substantial trips to and from the site.

*Landscaping and Stormwater Controls*

The project would remove nine trees, all of which are protected. The project proposes to plant a total of 11, 36-inch box trees.

Stormwater runoff from the site's impervious surfaces would be directed to treatment systems before being collected in a series of pipes sized for a 10-year storm event in accordance with the City's design requirements. One 6,248-square foot bioretention treatment area would be located on the northwestern corner of the project site. A second 2,047-square foot bioretention treatment area would be located on the on the southwestern corner of the project site.

*Recycled Water*

The project proposes to use reclaimed water for irrigation around the CUB site, as well as for the plumbing fixtures in the CUB building. In addition, recycled water would be used in the proposed cooling towers within the CUB building. Recycled water is available from an existing line in Coronado Drive, at the northeastern portion of the Bowers Campus. In order to serve the CUB building and project site, a connection to this line would be trenched from Coronado Drive south to the northeast side of the campus, where it would connect to a proposed soft water system. From there, the water line would be routed west along the northern side of the SC2 and SC1 buildings via an aboveground utility trestle, and then connect with the CUB site via a proposed underground connection with SC1 (Figure 59, Figure 60, and Figure 61).

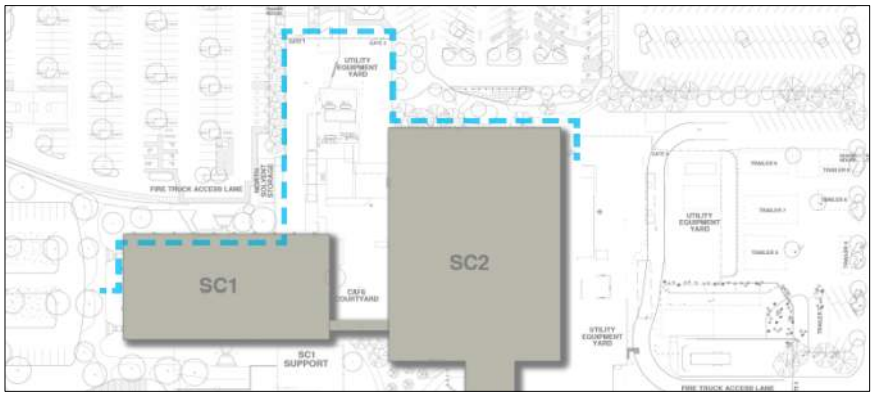


Figure 59. Plan view of 3065 Bowers Avenue, showing the proposed location of the above-ground recycled water pipeline (dashed blue line)
Source: Twinsteps Architecture

Figure 60. Rendering of the proposed pipeline at the north façade of SC2, viewed facing southwest; note the metal panel screening
Source: Twinsteps Architecture

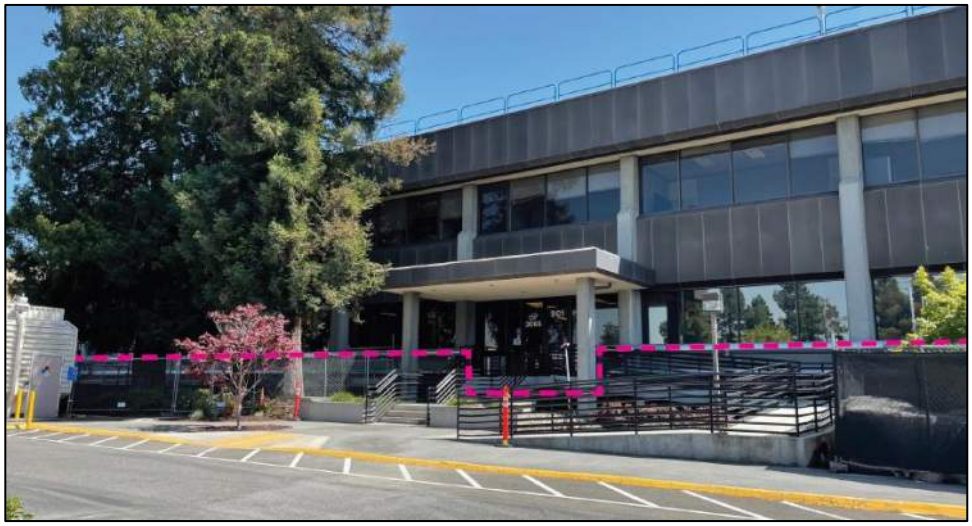

Figure 61. Illustration depicting the location of the proposed location of the recycled water pipeline along the north façade of SC1 (dashed pink line), aligned with the current location of an existing pipeline. The new pipeline would be routed underneath the landing platform at the main entrance, at center.
Source: Twinsteps Architecture

### *Construction*

Construction of the project is anticipated to begin in the fall of 2023 and would take approximately 15 months, with estimated completion in the fourth quarter of 2024. Construction activities would include demolition, excavation, grading, building construction, and paving, as well as deliveries and installation of the proposed equipment. Portions of the proposed CUB building and the mechanical equipment may be prefabricated by manufacturers off-site and delivered and installed at the project site.

## 7.5 Secretary of the Interior's Standards Analysis

This section provides an assessment of the proposed project's compliance with the Standards for Rehabilitation.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

   Discussion: SC1 currently houses office and fabrication facilities related to Intel's product manufacturing process. The current use will not change as the result of the CUB project: in fact, the project proposes new facilities intended to support the continued use of SC1 in a manner that is generally consistent with its product development and fabrication role during the period of significance. The project does not appear to propose any changes to the property's character-defining features. Therefore, the project would comply with Standard 1.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

   Discussion: Construction of the CUB would occur west of SC1 in a generally rectangular project site that currently contains a secondary parking lot. The new construction would be separated by a distance of approximately 50' from SC1 and would not have a direct physical connection to the original volume. Rather, the CUB would feature a raised trestle structure that connects its southeast corner to the Fan Deck Building, a separate volume that has been permitted separately and will be constructed immediately to the south of SC1 prior to the CUB. The parking lot where the CUB would be built dates to the original construction of SC1 but itself is not a character-defining feature of the property, as it lacks a direct association with the historically significant events that took place at 3065 Bowers Avenue. The CUB's footprint would lie inside of the perimeter vehicular drive along 3065 Bowers Avenue's western property boundary, and the new facility would not change the configuration of curved curb lines that are original to the property.

   Additionally, the project proposes to construct a raised trestle carrying the recycled water pipeline along the north façade of both SC2 and SC1. Although this façade currently is the least altered of all the property's façades, the new trestle is designed in a manner that minimizes its visual impact on the facility. At SC2, the pipeline will be raised on support columns that carry it above the first-floor window band, and the pipeline will be screened by face-mounted perforated panels that match the color of the volume's original cladding. At SC1, the pipeline will not be screened but will run at a height beneath the first-floor window, where an exposed pipeline is currently located. At the main north entrance to SC1, the pipeline will lower to pass under the existing concrete landing platform. Thus, it is not anticipated that the new pipeline would introduce a distracting element where one does not currently exist, and it would not substantially change the facility's visual character.

   Therefore, the project would comply with Standard 2.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

   Discussion: The project does not involve the introduction of conjectural elements that would lessen an observer's ability to understand SC1's historical development chronology. The CUB is designed in a contemporary architectural style that is distinct from the Late Modern vocabulary that defines SC1. It does not appear that the CUB would be confused for an original element on the property. Furthermore, the proposed recycled water pipeline that would be installed along the north façades of SC1 and SC2 would be compatible with materials and elements already present at those building volumes, but the new pipeline is anticipated to be identifiable as a new infrastructural feature. Therefore, the project would comply with Standard 3.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

   Discussion: The period of significance identified for 3065 Bowers Avenue, 1971-1992, is associated with the property's use as the Intel headquarters; subsequent alterations include the construction of Main Fab in multiple phases, as well as numerous auxiliary buildings, structures, and components of FSE. As detailed in the California Register evaluation in Section 6, no later periods of the property's development appear to have acquired historical significance in their own right. Therefore, only those elements of the property that date to the identified period of significance are included in the list of character-defining features listed in Section 6.4 and are considered in this Standards analysis. Therefore, the project would comply with Standard 4.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

   Discussion: The distinctive features, finishes, and construction techniques that characterize the property will be preserved. The CUB will be constructed nearest to SC1, a contributing volume of the property that is characterized by its Late Modern architectural vocabulary, two-story stepped massing, and material palette of concrete, glass, and metal panels. The project would result in no physical changes to the original building volume and limited changes to the overall site layout and circulation patterns, as described under Standard 2. Furthermore, the proposed recycled water pipeline would be constructed in close proximity to the existing building volumes but would not require the removal of character-defining exterior materials. Therefore, the project would comply with Standard 5.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

   Discussion: The project does not include the repair or replacement of any deteriorated historic elements of the property. Therefore, the project would comply with Standard 6.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. Details of a surface cleaning program were not included in the

   Discussion: The project does not propose to use any chemical or physical treatments on character-defining elements of the property. Therefore, the project would comply with Standard 7.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

   Discussion: The CUB project would involve ground disturbance and excavation within a footprint that has already been disturbed to an extent to construct a surface parking lot and planting islands. Furthermore, the project would involve the installation of subsurface water lines, including where trenching is required between Coronado Drive and SC2. It is anticipated that the CEQA review process will involve an archaeological investigation that will determine the project site's sensitivity for archaeological resources and propose appropriate mitigation measures, if significant archaeological materials may be disturbed. Furthermore, the City of Santa Clara 2010-2035 General Plan includes the following two goals for archaeological resources:

   - Goal 5.6.3-G1: Protection and preservation of cultural resources, as well as archaeological and paleontological sites;
   - Goal 5.6.3-GS: Appropriate mitigation in the event that human remains, archaeological resources, or paleontological resources are discovered during construction activities.

   These goals and associated policies would avoid or reduce impacts to archaeological resources, require monitoring during excavation in archaeological sensitive areas, and include stop work procedures in the event of an inadvertent discovery.[83] Therefore, the project would comply with Standard 8.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

   Discussion: The core component of the proposed project is to construct a new facility, the CUB, west of SC1. As introduced under the preceding Standards, new construction would be a separate, one-story building mass separated from SC1 by a distance of approximately 50 feet. The new facility would have an irregular but generally rectangular footprint and a flat roof surrounded by a parapet. The CUB would comprise a few different building volumes and would include varied exterior cladding materials that all appear to be industrial in nature (including different panel configurations of metal and/or similar utilitarian materials). With its parapet, the CUB would be generally similar in height to the original building volume of SC1 and would not overwhelm or

[83] City of Santa Clara, *2010-2035 General Plan*, 2010, accessed February 22, 2023, https://www.santaclaraca.gov/home/showpublisheddocument/13934/635729106120730000.

obscure it visually. Similarly, the CUB would be oriented within the site so that its north-south dimension would align with the corresponding dimension of SC1.

The contemporary architectural style of the CUB would be broadly compatible with the Late Modern architectural style of SC1, which is characterized by angular and rectilinear forms. The CUB's utilitarian exterior material palette is likewise compatible with, but differentiated from, SC1's exterior concrete, glass, and metal cladding. Fenestration at the CUB would be limited, which would contrast to the regular, tiered fenestration pattern of SC1. However, this design approach would reinforce the differentiation between the two building masses and would not represent severe enough of a contrast to diminish the integrity of SC1. Furthermore, because the raised trestle structure at the southeast corner of the CUB would connect to the Fan Deck Building, the project would not destroy or alter any of SC1's historic materials. Because the CUB would be compatible with the significant adjacent elements of 3065 Bowers Avenue in terms of its size, design, and materials, the California Register-eligible property would retain sufficient integrity to convey its significance as Intel's headquarters and a key fabrication facility from 1971 to 1992.

As described earlier under Standard 2, the addition of a recycled water pipeline to the CUB would involve a raised trestle along the north façade of SC2 and SC1. When compared to the overall mass of the historic facility, the new pipeline and trestle would be minor infrastructural elements that would not require the removal of historic materials. Although these elements would be installed in close proximity to the existing building volumes, the use of metal panel screening at SC2 would be similar to the building's original cladding material, reducing the pipeline's visual impact. Along SC1, the pipeline would have the visual character of a pipeline already in place, and it would be located below the first-floor windows and would not interrupt the overall organization and hierarchy of the façade. As a result, the new pipeline and associated trestle would generally be compatible with the architectural character of the property and would not adversely diminish its integrity. Therefore, the project would comply with Standard 9.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

    Discussion: Although unlikely, the CUB could hypothetically be removed in the future without resulting in permanent change to the character-defining features of SC1 or the 3065 Bowers Avenue property as a whole. Because the project proposes no permanent changes to SC1 and involves only limited change in the character of the site, 3065 Bowers Avenue's essential form, materials, and architectural aesthetic would remain wholly identifiable. Similarly, the new trestle and recycled water pipeline would not require the removal of historic materials and could be removed in the future with minimal change to the historic facility. Therefore, the project would comply with Standard 10.

In summary, the project appears to meet all ten of the Standards for Rehabilitation. Therefore, pursuant to the CEQA Guidelines, it appears that the project would have a *less than significant* impact on 3065 Bowers Avenue.

## 8. Conclusion

The subject property at 3065 Bowers Avenue appears to be eligible for listing in the California Register under Criterion 1 (association for significant events) for its association with Intel's critical role developing the semiconductor industry during the second half of the twentieth century. The company made pathbreaking innovations at its headquarters facility at 3065 Bowers Avenue in Santa Clara that revolutionized the microelectronics sector and paved the way for the greater integration of computer processing in everyday life around the globe. The property retains sufficient integrity to convey its significance under California Register Criterion 1, with a period of significance of 1971-1992. Due to its eligibility for listing in the California Register, the property qualifies as a historical resource for the purposes of CEQA review.

Based on an assessment of the CUB project using the Secretary's Standards for Rehabilitation, ARG has concluded that the project is consistent with the Standards and therefore would result in a less than significant impact on historical resources for CEQA. No mitigation would be required.

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# APPENDIX A: EXISTING CONDITION PHOTOGRAPHS

Center of SC1's north façade, viewed facing southeast

Canopy and exterior configuration at the north façade of SC1


Primary entrance at the north façade of SC1


Glazed entryway at the north façade of SC1, providing access to the reception lobby

Access ramp and west portion of the north façade of SC1

View towards the exposed basement level at the northwest corner of SC1, surrounded by scaffolding and other forms of FSE

West façade of SC1, viewed facing east

North half of SC1's west façade, featuring attached FSE

South half of SC1's west façade, including a non-original entrance

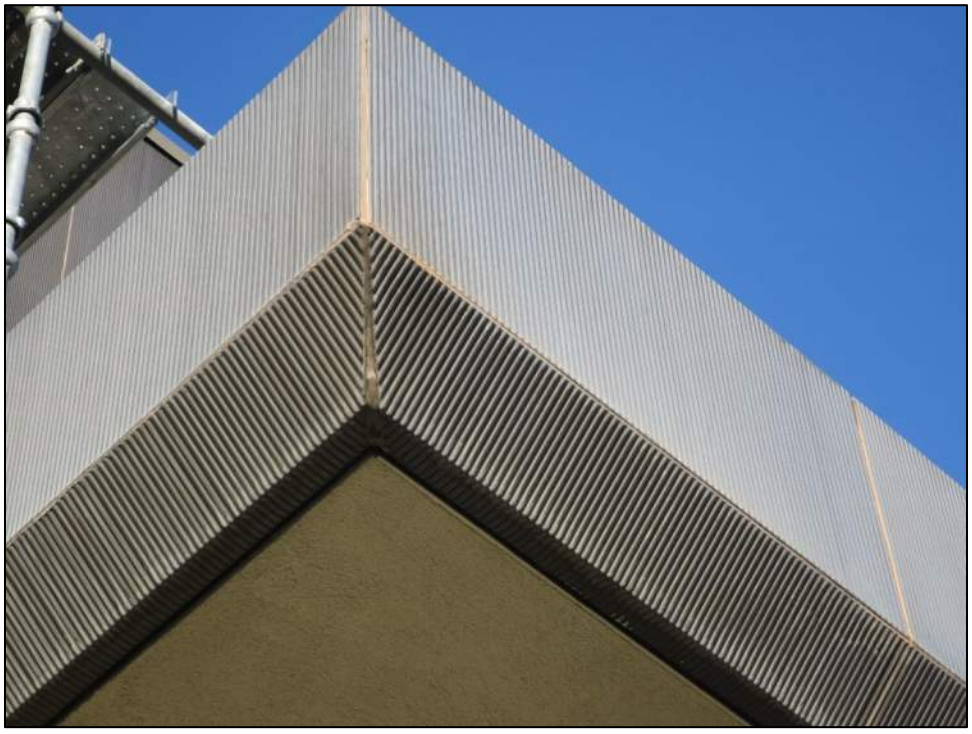
Detail of non-original entrance near the south end of SC1's west façade

Southwest corner of SC1, viewed facing northeast


South façade of SC1, viewed facing northeast

Entrance at the center of SC1's south façade, featuring a non-original metal gangway

Detail of entrance at south façade, showing original concrete steps beneath the non-original gangway



Detail of bottom edge of the canopy at the south façade entrance

Entrance and east half of SC1's south façade

FSE installed at the southeast corner of SC1; the hyphen with SC2 is at right

East façade of SC1, facing the interior courtyard it shares with SC2

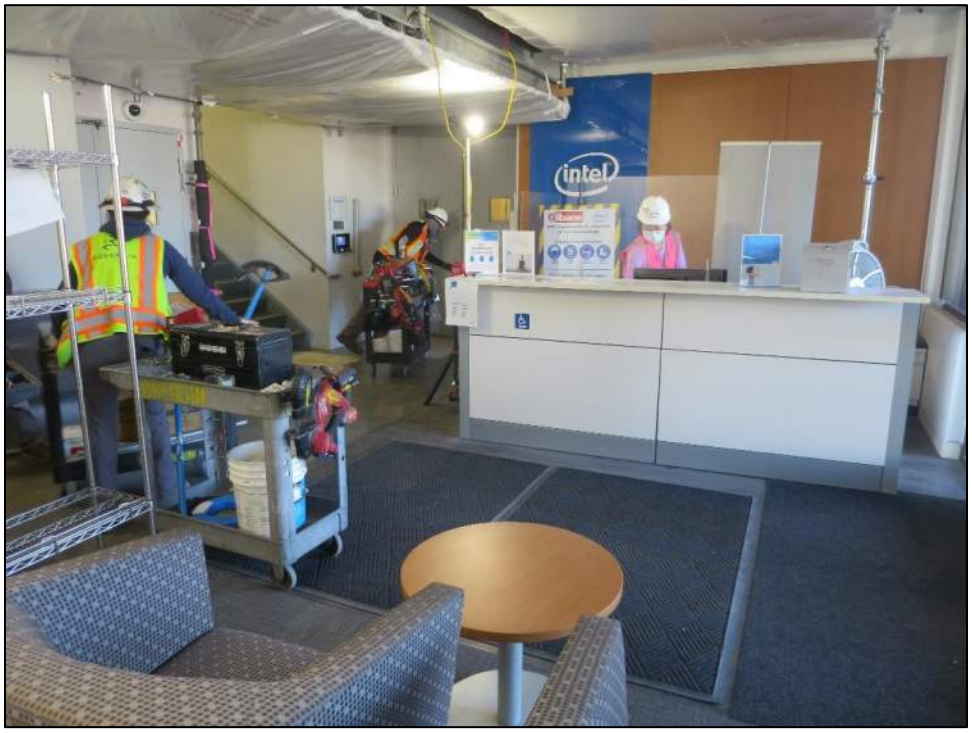
View of the exposed basement level at the intersection of SC1's east façade and the hyphen

View of the east façade, showing the shaped concrete pilasters and tiered façade configuration

Open space with steel structural columns in the basement level of SC1

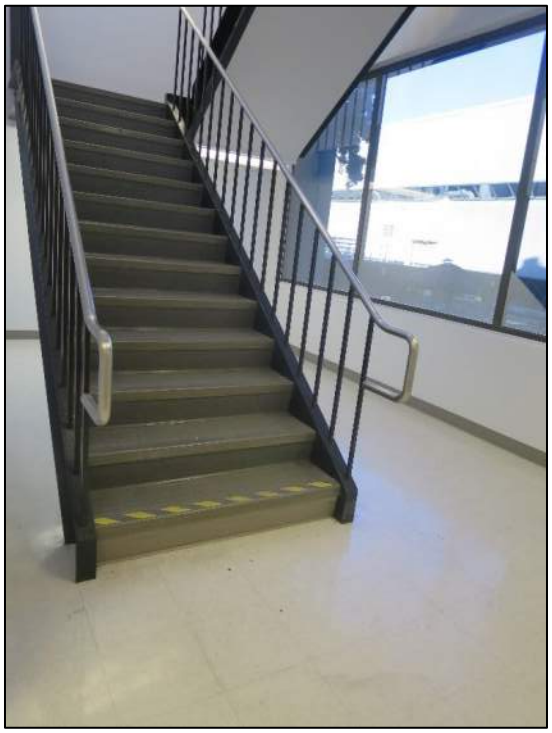

Typical finishes in the basement level of SC1


Finishes within a basement-level corridor of SC1




First-floor reception lobby in SC1

Finishes within a typical corridor at the first floor of SC1, providing access to fab spaces



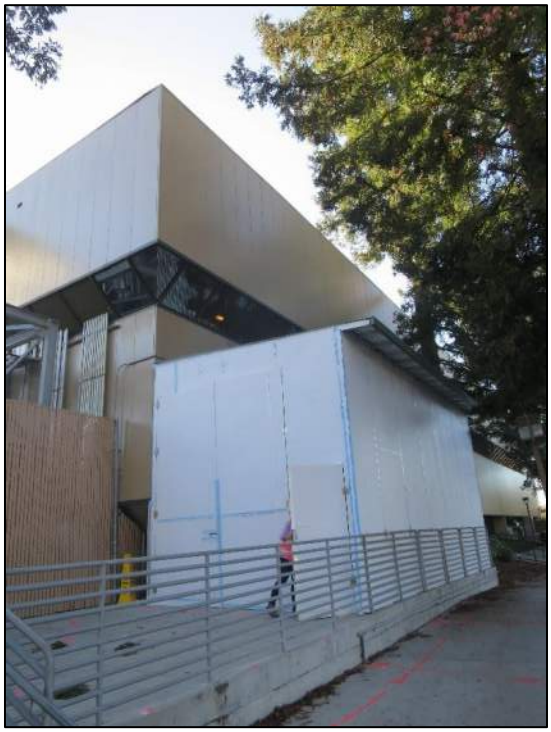
Half-turn staircase between first and second floors of SC1

Administrative area in second floor of SC1, showing typical finishes

New semiconductor facility currently under construction at the western portion of SC1's second floor

North façade of SC2, viewed facing south

North façade of SC2, viewed facing southeast; primary entrance is at center



Gowning room located at the northeast corner of SC2, viewed facing southwest


Primary entrance at the center of SC2's north façade

Detail of concrete platform vestibule and glazed walls at the primary entrance to SC2

North façade of SC2, viewed facing east toward the primary entrance, showing the characteristic reverse-stepped massing

West end of SC2's north façade

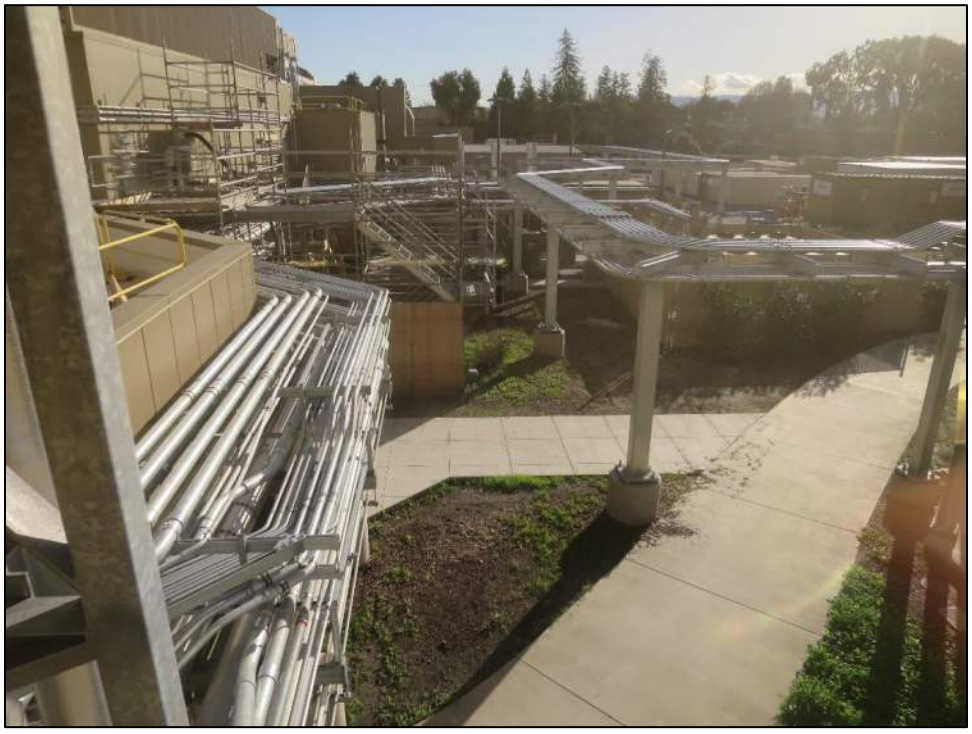
West façade of SC2, viewed facing northeast from the interior of the hyphen that links SC1 and SC2; a fenced equipment yard covers the northern half of the façade

West façade of SC2, viewed facing northeast from the courtyard; first-floor windows correspond to the interior cafeteria

Paired door at the center of SC2's west façade, which provides access to the courtyard

West façade of SC2, viewed facing southeast from the courtyard; hyphen is visible at right

Visible portion of the south façade of SC2, near its west end; the remainder of the façade is covered by Main Fab and various forms of FSE

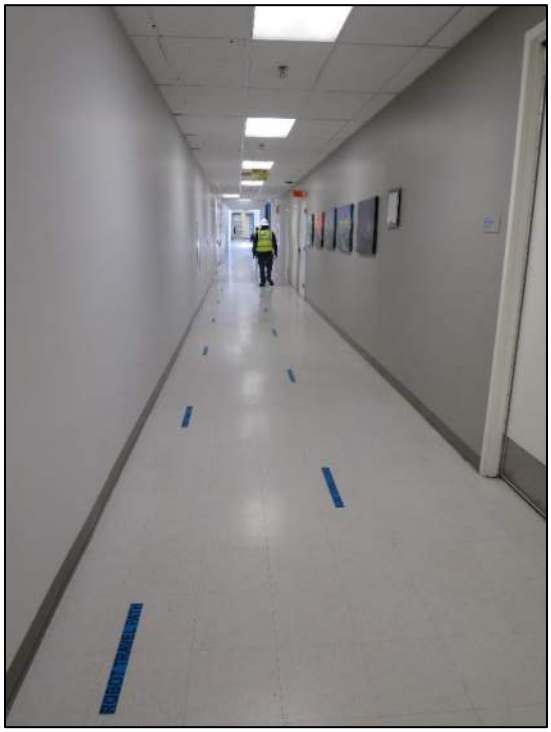


FSE and circulation paths located south of SC2, viewed from the interior of the hyphen; Main Fab is at left

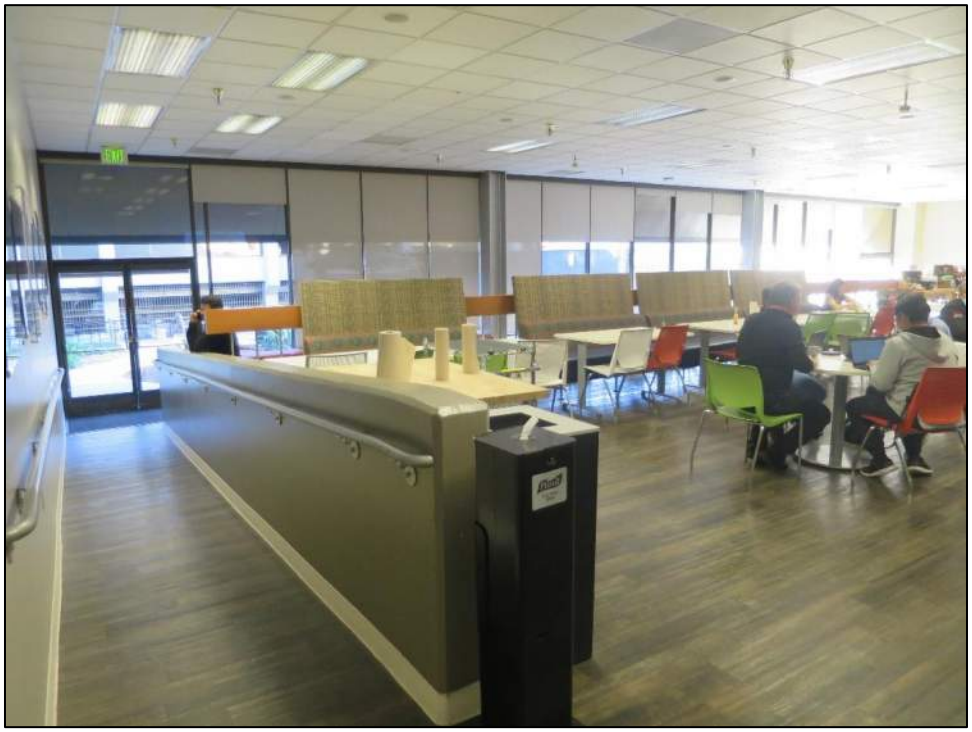
The center of the east façade of SC2, including adjacent FSE, viewed facing east

Loading platform located at the east façade of SC1


Reception lobby of SC2, accessed via the primary entrance at the north façade; all finishes appear to be non-original



Typical non-original finishes within an interior corridor at the first floor of SC2

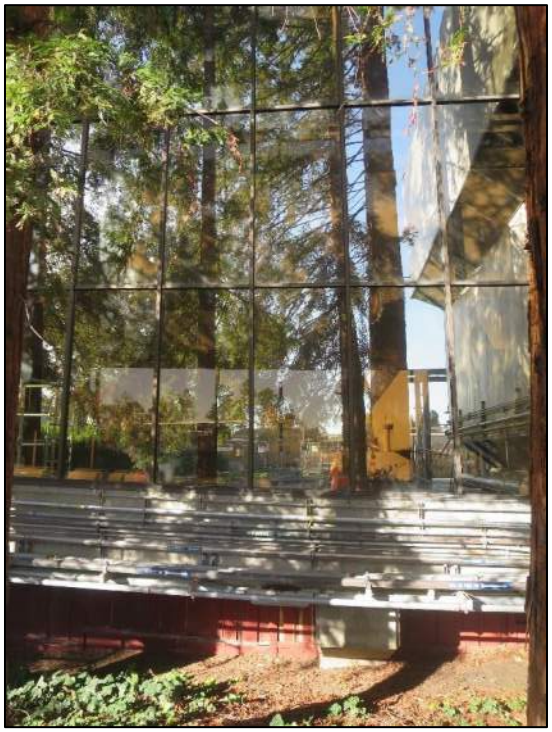


Employee cafeteria, located along the west side of SC2 on its first floor


Typical non-original finishes in an administrative area at the second floor of SC2

Hyphen, viewed facing south from the courtyard; SC1's east façade is at right

Shaped concrete columns at the base of the hyphen



Glazing grid that forms the north and south walls of the hyphen

Juncture of SC2 (left) and the hyphen (right), viewed facing southeast from the courtyard

Second-floor walkway through the interior of the hyphen, viewed facing east from SC2 toward SC1

North end of Main Fab's west façade, including the projection with the primary entrance to the volume

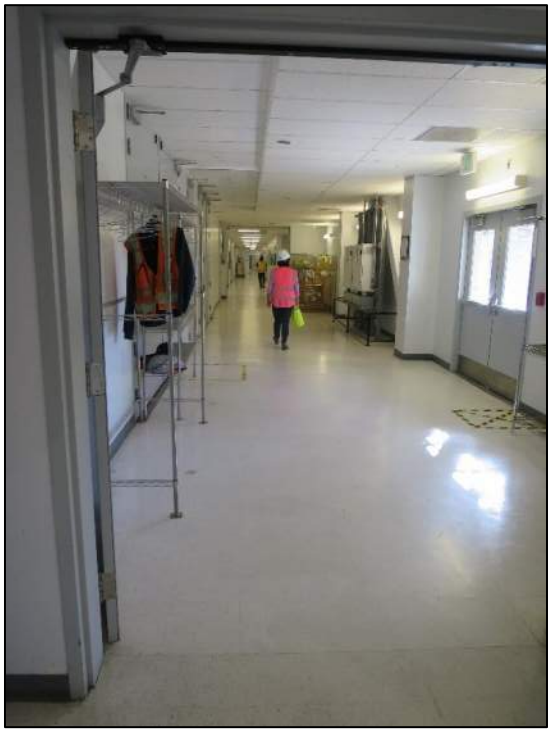
Detail view of typical trestle and other FSE attached to the exterior of Main Fab

Loading bay featuring raised concrete platform at the east façade of Main Fab


FSE and support structures located near the center of Main Fab's east façade

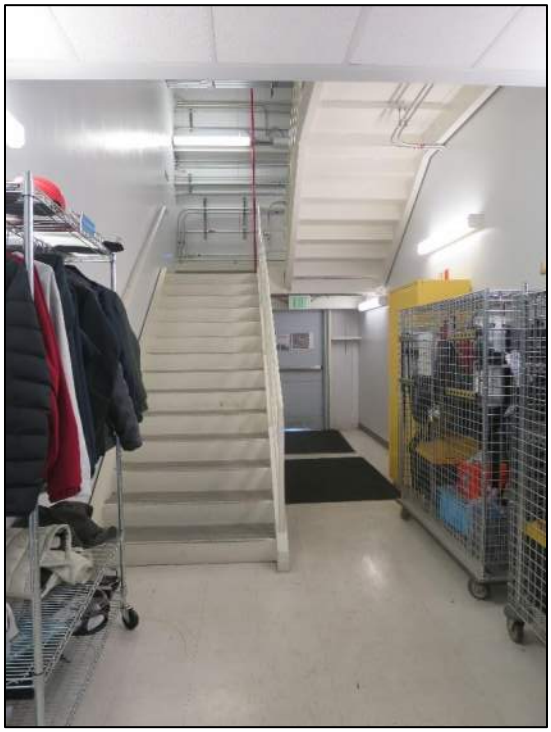
Loading platforms and associated FSE near the northeast corner of Main Fab, viewed facing southwest

The juncture of Main Fab (at left) with SC2 (at right), viewed facing west



Typical finishes within a corridor at the first floor of Main Fab

Typical appearance of an interior space inside Main Fab's loading docks



Stairway from the first floor to a mezzanine level within Main Fab

Representative vehicular drive and guard shack near the western parcel boundary

Current Intel identification sign located near Bowers Avenue along the west site perimeter, viewed facing south

View of typical vehicular circulation and planting islands arranged amidst the property's parking areas in the north half of the parcel

View of paved surface parking lots and typical vegetation, with the north façade of SC1 visible to the rear, facing south

Prefabricated gabled sheds lining the southern perimeter of the property, near the southeast corner of Main Fab, viewed facing northeast


Prefabricated support building located south of Main Fab, viewed facing north

Soundwall delineating the southern boundary of the parcel along Central Expressway, viewed facing west

Extended-height storage building located east of Main Fab near the eastern parcel boundary

Typical mobile trailer located near the eastern parcel boundary, currently serving an office role


View of the vehicular drive that leads along the east parcel boundary, viewed facing south

Representative downward-facing light standard in the parking lots at the north half of the parcel

Specialized support structure located north of SC1, viewed facing southeast; west façade of SC2 is visible at the left edge of the image

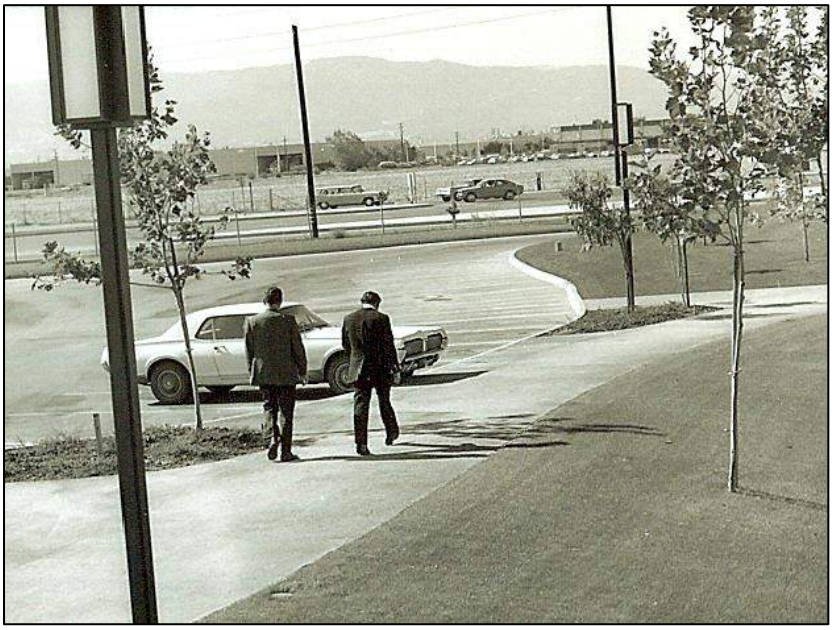
# APPENDIX B: HISTORIC PHOTOGRAPHS

Robert Noyce (left) at the groundbreaking ceremony for the construction of SC1, c.1970
Source: Intel Corporation

Intel employees standing outside SC1 shortly after its completion, c.1971, viewed facing northeast
Source: Intel Corporation


Undated photograph of the west and south façades of SC1, including adjacent parking areas, vegetation, and the original Intel sign
Source: Silent Icons of the Silicon Valley

Undated (c.1971) photograph of Robert Noyce and Gordon Moore standing adjacent to SC1
Source: Intel Corporation



View of Gordon Moore and Robert Noyce south of SC1, viewed facing southwest; original light standard and vegetation are visible
Source: Intel Corporation

View of the pear orchard on the site of 3065 Bowers Avenue, likely photographed after the construction of SC1
Source: Intel Corporation

View of the south façade of SC1, with the newly constructed SC2 visible in the background, 1975
Source: Creative Commons


Undated photograph of SC1 and the original Intel sign, viewed facing northeast toward the west façade
Source: Silent Icons of the Silicon Valley

# APPENDIX C: DEPARTMENT OF PARKS AND RECREATION 523 FORMS

**State of California ♘ The Resources Agency** Primary #
**DEPARTMENT OF PARKS AND RECREATION** HRI #
# PRIMARY RECORD
Trinomial
**NRHP Status Code**
Other Listings
Review Code _____ Reviewer _____ Date

 ***Resource Name or #** (Assigned by recorder): 3065 Bowers Avenue
**P1. Other Identifier:** Intel Bowers Campus

*__P2.__ **Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Santa Clara **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Milipitas/San Jose West **Date** 2021 **T** 6S; **R** 1W; **Sec** 28; **B.M.**

c. Address: 3065 Bowers Avenue City: Santa Clara Zip: 95054

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 590644 mE/ 4137104 mN

e. Other Locational Data: 216-46-015

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The subject parcel addressed at 3065 Bowers Avenue, APN 216-46-015, is located within a predominantly light industrial and commercial district in northwest Santa Clara, California. The irregularly shaped parcel is bounded by Bowers Avenue to the west, Central Expressway (County Route G6) to the south, and adjacent parcel boundaries to the east and north. (See continuation sheet.)

***P3b. Resource Attributes:** HP8 – Industrial Building

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing

P5b. Description of Photo: (view, date, accession #) Figure 1. North façade of SC1, viewed facing southeast (ARG, January 2023)

***P6. Date Constructed/Age and Source**
☒ Historic ☐ Prehistoric ☐ Both
SC1: 1971; SC2: 1974; Main Fab: c.1996-2003 (Intel Corporation)

***P7. Owner and Address:**
Intel Corporation
2200 Mission College Boulevard
Santa Clara, CA 95054

***P8. Recorded by** (Name, affiliation, and address):
Architectural Resources Group
Pier 9, The Embarcadero, Suite 107
San Francisco, CA 94111

***P9. Date Recorded:** January 17, 2023
***P10. Survey Type:** Intensive

***P11. Report Citation:** Architectural Resources Group, REVISED *Historic Resource Technical Report, 3065 Bowers Avenue, Santa Clara, California*, prepared for David J. Powers & Associates, Inc., June 2023.

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List): _____

# BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder): 3065 Bowers Avenue ***NRHP Status Code**: 3CS


B1. Historic Name: Santa Clara 1; SC1; Santa Clara 2; SC2

B2. Common Name: Bowers Campus; Intel Mask Operations

B3. Original Use: Corporate Administration; Semiconductor Manufacturing B4. Present Use: Semiconductor Manufacturing

***B5. Architectural Style:** Late Modern (SC1 and SC2); Utilitarian Industrial (Main Fab)

***B6. Construction History:** See continuation sheet.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location**: N/A

***B8. Related Features:** N/A

B9a. Architect: Simpson, Stratta & Associates (SC1) b. Builder: Howard J. White (general contractor)

***B10. Significance: Theme:** Semiconductor Development **Area:** Industry
**Period of Significance**: 1971-1992 **Property Type:** Semiconductor Manufacturing Facility **Applicable Criteria:** 1

***Prewar Development of the Santa Clara Valley***

The County of Santa Clara is one of twenty-seven California counties created in 1850, the year that California gained statehood. San José was selected as the first state capital, and the combination of legislators, newsmen, and others seeking employment in the city spurred urban development in the surrounding Santa Clara Valley region. (See continuation sheet.)

B11. Additional Resource Attributes: (List attributes and codes): N/A

***B12. References:** See continuation sheet.

B13. Remarks:

***B14. Evaluator:** Jon Rusch, Architectural Resources Group
***Date of Evaluation:** February 22, 2023

(Sketch Map with north arrow required.)

**State of California ◆ Natural Resources Agency**
**DEPARTMENT OF PARKS AND RECREATION**

# LOCATION MAP

Primary #
HRI#
Trinomial



***Resource Name or #** (Assigned by recorder) 3065 Bowers Avenue

***Map Name:** 3065 Bowers Avenue Location Map

***Scale:** 1:24,000

***Date of map:** February 24, 2023

***P3a. Description** (continued):

The eastern portion of the subject parcel's northern boundary also follows Coronado Drive. Perimeter planting beds containing mature trees and low shrubs demarcate the majority of the parcel's boundaries. The southern boundary of the parcel along Central Expressway is lined by a sound wall constructed of rough-faced concrete masonry units, and a metal chain-link fence leads along the majority of the west and north parcel boundaries. The primary vehicular entrance to the property is a gated drive accessed from Bowers Avenue near the parcel's northwest corner; a secondary vehicular entrance is along Coronado Drive along the north parcel boundary.

Generally, the northern third of the parcel contains a surface parking lot paved in asphalt, which includes curbed planting islands that separate vehicular circulation paths. Within the planting islands are a variety of trees, shrubs, and grasses. Standing within the parking lots are steel light standards with downward-facing lights. Several prefabricated guardhouses are located along travel routes throughout the parking lot.

SC1 is located at the center of the parcel's western half, and a surface parking lot with planting islands lies between the building and Bowers Avenue. The eastern half of the parcel is dominated by the expansive footprint of the conjoined SC2 and Main Fab, fenced mechanical yards and loading zones, concrete pads, prefabricated trailers, gangways, and various forms of facility support equipment (FSE). For the purposes of this report, FSE refers to the numerous types of ductwork, ventilation and exhaust infrastructure, scaffolding, storage tanks, and trestles that support the production activities housed within the property's interior fabs. SC1 and SC2 are connected by a two-story hyphen volume. Planting areas and poured concrete sidewalks lie immediately adjacent to SC1 and SC2 wherever it does not feature fenced yards and FSE.

Additional vehicular drives lead along the eastern and southern parcel boundaries and provide access to various parking and loading areas within the property. Surrounding parcels contain one- to four-story light industrial and office buildings; similar to the subject property, surrounding parcels typically contain surface parking lots, planting islands, and vegetation such as mature trees.

***Santa Clara 1 (SC1)***

The original building constructed on the parcel in 1971 is known as Santa Clara 1 and popularly abbreviated as SC1. SC1 is a two-story, flat-roofed office and fab facility with Late Modern architectural elements (Figure 1). SC1 has a rectangular plan oriented from east to west, measuring approximately 250' long by 125' wide. The primary volume is raised above grade, and the ground has been excavated to partially expose the basement level. The basement level is recessed and surrounded by mechanical equipment; in some areas the basement-level equipment is screened behind metal grating or chain-link fencing (Figure 3), while in other areas it is unenclosed. The excavated slopes surrounding the basement level are commonly covered in square granite pavers. The perimeter of the building is supported on regularly spaced, concrete structural columns that transition to pilasters rising nearly the full height of the building before terminating under the projecting frieze. These elements have chamfered corners and are shaped so that they angle slightly outward between the floor slabs of the first and second floors in order to accommodate bulging spandrel panels.

Apart from the vertical columns, SC1's exterior design is configured as a series of stacked, horizontal bands or tiers. These tiers include the following: a building base that corresponds to the lower floor slab; spandrel panels between the first and second floors; and a projecting frieze at the roofline. Intervening window ribbons daylight the first and second floors. The base is constructed of exposed, smooth-finished concrete that matches the appearance and texture of the exterior structural columns. The spandrel panel, in contrast, is clad in grooved metal panels; the same material clads the frieze. The top and bottom edges of the spandrel panel and frieze are angled, which echoes the chamfered corners of the concrete pilasters. The base, spandrel, and frieze all project beyond the window bands, although in a reverse stepped pattern: the base projects just slightly, the spandrel somewhat more, and the frieze most of all (Figure 4). Although this articulation pattern creates the impression of an inverted ziggurat, the floor slabs at the first and second floors appear to be identical in dimension. The window ribbons contain bands of dark tinted glass that wrap around all façades of the building. The panes are fixed and held in anodized aluminum frames.

SC1 features various non-original attached elements that have been added over time to support its ongoing technological fabrication use. FSE is present on the roof and on the north, west, and south façades. A metal railing now encircles the edge of the roof. A non-original one-story, flat-roofed volume known the gas pad building, measuring approximately 75' by 75', projects from SC1's south façade near the building's eastern end.

The primary façade faces north and features the main entrance to SC1 (Figure 5). The entrance is located at the center of the façade and is integrated into the band of windows that spans the first story (Figure 6). It comprises a pairing of fully glazed, metal-framed pedestrian doors and is accessed by a raised concrete landing with poured concrete steps that lead up from the adjacent parking lot. Along the sidewalk that lines the edge of the parking lot, the steps are flanked by triangular planting beds with concrete edge walls. A non-original ADA ramp descends from the west side of the landing and features two quarter turns before reaching grade. Both the landing and the ramp feature modern metal pipe handrailing. The landing is sheltered underneath a projecting canopy supported by two concrete columns that generally match the appearance of the structural columns located across the building's façades. The outer face of the canopy is clad in the same metal as the spandrel panels and frieze and features a similar angled bottom edge. To the east of the entrance, much of the façade currently features metal scaffolding and FSE. The east end of the façade abuts an adjacent fenced equipment yard.

The west façade continues the general design of the north façade, although a substantial amount of FSE projects from the building's northwest corner; a second assemblage of FSE is located south (right) of center (Figure 7). Two first-floor entrances are located near the ends of the façade and are not original to the building. FSE largely obscures the altered northern entrance, which currently comprises a single pedestrian door within an opening infilled by vertical-seam metal panels. The southern entrance is a fully glazed pedestrian door with fixed transom and side lite. Both entrances have concrete landings with edge walls; the landings extend over the excavated basement level before descending to grade. The southern entrance also features a lower landing with three broad steps that reach an asphalt sidewalk. The FSE and a recently installed support trailer occupy an area that originally contained vegetation and circulation paths. The west façade faces a secondary parking lot.

When SC1 was constructed, the south façade was nearly identical to the north façade, featuring a central entrance sheltered underneath a projecting canopy. However, the visual character of the south façade has been changed through the installation of FSE, which is concentrated at its western half (Figure 8). Near the center of the façade, a section of the first-floor window band has been infilled with stucco. This area includes the entrance, which now projects slightly underneath the canopy and contains a grouping of three fully glazed, non-original pedestrian doors. Although the original canopy, concrete landing, and steps remain in place, the entrance is currently accessed by a railed metal gangway installed above the original approach sequence (Figure 9). The eastern end of the façade abuts a fenced storage yard and the one-story gas pad building.

The building's east façade, which faces the interior courtyard between SC1 and SC2, continues the building's typical tiered configuration. FSE and the hyphen connecting SC1 and SC2 are located near the south end of the façade; apart from these features, the façade appears unchanged since the building's construction (Figure 10). It has no exterior entrances. The adjacent courtyard contains curvilinear, poured concrete walking paths, areas of cobblestone pavers, seating areas with temporary furnishings, beds with shrubs and ground-covering plants, and a gazebo installed c.1989.

The interior of SC1 contains a collection of production spaces that appear to have been updated continually since the building's construction to facilitate Intel's evolving development programs. Due to the highly controlled nature of the interior fabs, ARG did not closely inspect all interior spaces. However, few of the observed interior elements appear to date to the building's construction or early years of operation.

The basement level of SC1 contains an open space at the west end that contains new steel structural posts to support the weight of equipment installed within the first-floor fabs above. This level also contains an open-plan storage area, offices, and corridors. Interior walls are of exposed concrete masonry unit construction or are covered in gypsum board. Floor finishes

observed throughout the basement level include linoleum tile, plywood boards, and exposed poured concrete. Some wood doors, baseboards, and chair rails are present.

The first floor contains a reception lobby immediately inside of the building's primary entrance on the north façade. Fabs, clean rooms, and corridors are located within the eastern portion of SC1, while a new fab and clean room is being constructed in the west portion. Interior finishes appear not to be original and include carpet and linoleum tile flooring, gypsum board walls, rubber baseboards, and suspended lay-in acoustic tile ceilings (Figure 11). Doors along the corridors are generally constructed of steel and feature small windows. A large open stairwell at the southeast corner of the building provides access to the second floor.

The second floor of SC1 contains a large open-place office space with modular workstations. A fab is currently under construction within the western portion of the building. Floor, wall, and ceiling finishes are similar to those on the first floor and do not appear to be original to the building.

***Santa Clara 2 (SC2)***
Completed in 1974, SC2 lies immediately east of SC1 and is a rectangular-plan, flat-roofed office and fab facility with a footprint measuring approximately 200' wide by 275' long (Figure 12). Its primary axis runs perpendicular to that of SC1. Th exterior of SC2 has some design similarities to SC1, although it is a more exaggerated expression of the Late Modern architectural style. SC2 sits on grade with no basement; it has a raised concrete bulkhead that is exposed above the foundation. Like SC1, SC2 has a tiered, reverse-stepped form, although SC2's stepped profile is more pronounced. Above the bulkhead, the exterior features two tall bands of cream-colored metal panels. At the first and second floors are bands of outward-angled windows, which contain fixed tinted glass panes held in anodized aluminum frames; the window bands span the width of each façade and appear as narrow slits between the broader bands of opaque panels. The roof features a parapet along its perimeter, similar to SC1, and contains various forms of mechanical equipment.

The primary façade of SC2 faces north towards a landscaped area containing curvilinear concrete sidewalks and large planting beds with redwoods and other trees, as well as ornamental bushes and shrubs (Figure 13). The building's primary entrance is located at the center of the façade and comprises a band of windows and glazed doors fixed between mullions clad in anodized aluminum. The entrance is recessed, creating a vestibule and landing in front of the paired door that provides access to the building's main lobby (Figure 14). An ADA ramp and set of stairs descend to grade from the landing. The entrance is flanked by engaged piers clad in plywood boards and painted to match SC2's metal panel siding. A prefabricated, non-original gowning room projects from the main volume of SC2 at the east end of the north façade.

The majority of the west, south, and east façades of SC2 abut fenced equipment yards and associated support facilities, and/or are covered in various forms of FSE; therefore, much of the building's exterior at these façades could not be inspected closely. It appears that the stepped design and fenestration pattern visible at the north façade is present across the remainder of the building, although the installation of FSE has necessitated non-original openings and attachment points.

The south end of the west façade is exposed along the interior courtyard previously described (Figure 15). Between the equipment yard and SC2's juncture with the hyphen is a band of first-floor windows that correspond to the interior cafeteria. These windows are fixed, separated by aluminum-clad mullions, and located above a concrete bulkhead with a projecting sill (Figure 16). Pairings of fully glazed pedestrian doors lie at both ends of this window band.

The portion of the south façade that lies west of Main Fab remains visible and continues SC2's typical façade configuration (Figure 16). This portion of the façade faces a landscaped area that contains a concrete approach walk as well as FSE carried on trestles. Main Fab joins SC2 at the center of the south façade; the eastern half of the south façade and the entirety of the east facade are largely obscured by a water purification plant and air conditioning facilities, which contain various forms of FSE, exterior enclosures, and utilitarian outbuildings (Figure 17). A loading dock containing a raised concrete platform and steel pedestrian doors is located at the north end of the east façade. At the loading dock, the walls are clad in vertical plywood siding.

Like SC1, the interior of SC2 has been remodeled and reconfigured repeatedly since the building's construction in order to accommodate the technical programs it houses. At the first floor, a reception lobby lies inside of the main entrance at the center of the north façade (Figure 18), and the cafeteria is located in the western portion of the building. Throughout the remainder of the interior, internal corridors lead among various fabs and other equipment areas (Figure 19). Observed finishes include linoleum tile and laminate flooring, gypsum board walls with rubber baseboards, and suspended lay-in acoustic tile ceilings. The second floor of SC2 contains a large open-plan office space containing exposed structural columns, modular workstations, and typical non-original finishes. The northeast portion of the second floor also contains equipment that supports fabs on the first floor.

***Hyphen***

The hyphen is a flat-roofed, elongated rectangular-plan volume that spans the approximately 50-foot distance between SC1 and SC2. The hyphen is presumed to date to 1974, the same year SC2 was completed, and provides interior circulation between the two adjoining volumes at the first and second floors. The roof of the hyphen is slightly lower than the roof planes of either SC1 or SC2.

The hyphen's exposed north and south exterior faces are fully glazed curtain walls, in contrast to the two volumes it links (Figure 20). However, the hyphen has some similarities to the design of SC1. At the basement level, the hyphen features angled concrete structural columns that mimic the design of the columns at SC1; however, the hyphen's columns terminate below the base tier rather than rise the full height of the volume as pilasters. The hyphen also features tinted glass that matches the appearance of the glass in SC1's window bands. The hyphen's glazing is arranged in a grid of anodized aluminum frames, which continue to the roofline. The roofline features a projecting, angled soffit that meets the bottom edge of SC1's frieze. The hyphen's roof accommodates various forms of FSE running between SC1 and SC2.

The interior of the hyphen contains a first-floor corridor and a railed walkway at the second floor. These spaces feature exposed structural columns and modern finishes, including linoleum tiles and carpeting (Figure 21).

***Main Fab***

Main Fab, also referred to as BW1, is an extended-height one-story manufacturing facility located south of SC2; it is formed by multiple rectangular volumes that form a footprint measuring approximately 275' by 275', and it has numerous flat roof planes. The original component of the facility, constructed in c.1996 and called M2, is a generally square volume extending south from SC2 via a hyphen. M3 was constructed c.2004 and comprises additional volumes along the east and north sides of M2. Main Fab is the most utilitarian facility within the subject property: it has concrete walls and is clad in vertical metal panels. Like SC2, much of Main Fab is heavily covered in a vast and irregular collection of FSE, and it has an assortment of pedestrian doors and vehicular loading bays. Appended storage and equipment yards, which contain temporary support trailers and copious amounts of FSE, appear to have been added in an ad hoc fashion over time and contribute to the irregularity of the facility's exterior organization.

Primary entrances to Main Fab are located at the north end of the west façade, near the juncture with SC2; here, a one-story volume projects to the west (Figure 22). One pairing of fully glazed doors is located north of the projecting volume, immediately adjacent to the south façade of SC2; another door pairing is located at the angled southwest corner of the projection. The remainder of the west façade features fenced equipment yards containing mobile support trailers and FSE. The south façade faces a paved, fenced loading zone accessible through a rolling gate; aerial photographs reveal the façade contains a series of single and paired pedestrian doors, as well as overhead roll-up vehicular loading doors. The east and north façades similarly feature vehicular loading zones containing storage trailers, trestles, raised gangways, and other forms of FSE. The northeast corner of Main Fab features a raised concrete walkway and loading platform sheltered under a metal canopy roof; this walkway provides access to additional pedestrian entrances into the building (Figure 23).

Only limited areas of Main Fab's interior could be inspected during field survey. Generally, the building is arranged with interior fab spaces surrounded by perimeter corridors, which have typical linoleum tile flooring, gypsum board walls, and suspended lay-in acoustic tile ceilings (Figure 24). Loading docks located inside of the loading zones at the south and east sides of the building have unfinished concrete floors, and metal trusswork at the ceiling is exposed. Steel staircases in the building climb to catwalks that pass above equipment that supports the building's fab spaces.

***Auxiliary Facilities***

As noted previously, the subject property contains support facilities that are directly attached to SC1, SC2, or Main Fab, which include storage structures, trailers and sheds, and gowning rooms. In addition, numerous detached buildings and structures are concentrated along the south and east parcel boundaries. All of these facilities appear to have been constructed after 2000; due to their recent age, they are not described in detail. They generally convey a utilitarian architectural character and support the product development and manufacturing uses of the property's fabs. Many of the auxiliary facilities are temporary mobile trailers that lack permanent foundations and are slightly elevated above grade (Figure 25). Additional facilities are prefabricated metal storage sheds with gabled roofs and corrugated metal siding panels (Figure 26). The property also features industrial facilities that are more specialized in design and use but still appear to be prefabricated (Figure 27).

***B6. Construction History** (continued):

Table 1 below summarizes the most relevant building permits on file at the City of Santa Clara Building Department for major exterior alterations to the property at 3065 Bowers Avenue. City records document many alterations to the property since the construction of SC1 in the early 1970s: given the facility's continued use for product development and fabrication, Intel frequently has undertaken interior tenant improvements, mechanical system upgrades, and the construction of exterior storage buildings and equipment enclosures that support the operations of the primary facilities. ARG reviewed the complete permit list and identified those that are most applicable to the current analysis, which are listed below. The selected permits do not include the minor and/or interior scopes of work that reflect the continuum of operations and incremental upgrades to the property over time. Hundreds of permits associated with the property are excluded because they document changes to electrical systems, HVAC, drainage, sewers and plumbing, and interior walls and finishes. The installation of exterior equipment, foundations, and canopies are furthermore not listed below.

**Table 1. Construction Chronology for 3065 Bowers Avenue**

| Permit No. | Year Issued | Description of Work |
|---|---|---|
| BLD1970-36770 | 1970 | Construct 2-story industrial building |
| BLD1973-41497 | 1973 | Erect 2-story industrial building |
| BLD1973-41645 | 1973 | Erect addition and office area |
| BLD1977-46536 | 1977 | Construct loading dock and metal canopy |
| BLD1977-46536 | 1977 | Construct parking lot |
| BLD1989-82730 | 1989 | Construct gazebo |

| Permit No. | Year Issued | Description of Work |
|---|---|---|
| BLD1994-102108 | 1994 | Construct guard shack/gates |
| BLD1996-107776 | 1996 | Add retaining wall |
| BLD1996-108458 | 1996 | Install 8'-6" fence |
| BLD1996-111900 | 1996 | Building addition |
| BLD2004-02581 | 2004 | Expand existing building to add new manufacturing building |
| Source: City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue, accessed January 18, 2023, https://www.santaclaraca.gov/our-city/departments-a-f/community-development/building-division. | | |

***B10. Significance** (continued)**:**

The fertile valley also attracted agricultural interests, including many former gold miners who shifted their efforts from prospecting to farming or ranching.[1]

Outside of San José, cattle ranching was the Santa Clara Valley's primary economic activity in the early years of California statehood. Initially, the open range method was common among ranchers, but pasture lands dwindled as the region became more densely settled; stock farming, which utilized smaller lots and intensified production techniques, supplanted pasture grazing by the 1860s. Wheat was also a staple agricultural product of the Santa Clara Valley at this time, as the region's highly fertile soil facilitated easy cultivation and high yields with relatively little capital investment. By 1854, thirty percent of California's total wheat crop was produced in Santa Clara County, and it was "arguably the most important agricultural county" in the state.[2] Other grain crops, primarily barley and oats, were also produced in significant volumes.[3]

In addition to agricultural development, the 1860s saw the introduction of railroad transportation into Santa Clara County. The San Francisco & San José Railroad was organized in 1860, and the first train arrived in San José from San Francisco on January 16, 1864. The Central Pacific Railroad (originally the Western Pacific Railroad) was completed between San José and Niles, California, in 1869, connecting San José with the transcontinental railroad and opening the Santa Clara Valley to markets across the United States. The railroad, subsequent population growth, and intensified agricultural production changed the landscape of the valley, catalyzing the development of small towns along the rail lines and resulting in the breakup of large land holdings.[4]

By 1870, nearly all acreage in rural Santa Clara County was devoted to wheat and barley production. When yields fell in 1879-1880, however, farmers quickly diversified their interests to include dairy cows, sheep for wool, poultry for eggs, swine for meat, and hay, grape vines, and fruit trees. The latter proved to be particularly lucrative. By the late 1880s, orchard products (prunes, in particular) came to dominate agricultural production in the Santa Clara Valley. The region's fruit canning and packing industry was pioneered by a San José physician, Dr. James Dawson, in 1871 and grew alongside orchard production.

[1] Archives & Architecture, LLC, *County of Santa Clara Historic Context Statement* (Santa Clara, California: County of Santa Clara Department of Planning and Development Planning Office), revised 2012, 7.
[2] Jim Gerber, "The Origin of California's Export Surplus in Cereals," *Agricultural History* 67, no. 4 (Autumn 1993): 47.
[3] Archives & Architecture, *County of Santa Clara Historic Context Statement*, 37-38.
[4] Ibid., 40.

Subsequently, the manufacture of food processing machinery and orchard spraying equipment became an important aspect of the local industrial economy. Early industrial development in Santa Clara County began to appear in 1864 alongside the recently constructed transportation lines.[5]

Fruit production in the Santa Clara Valley continued to increase, peaking in the 1920s. As the ratio of crop value to land area increased, many of the large, diversified farms and wheat fields that had been prevalent in the nineteenth century were subdivided into specialized "fruit ranches" that were three to 50 acres in area. The introduction of the automobile and commercial development of the trucking industry in the early twentieth century also impacted land use patterns in the valley, as it greatly facilitated local distribution and catalyzed the development of city roads and intercity highways. By 1928, all of San José's city streets had been paved, and highways connected the city to San Francisco, Oakland, and the coast.[6]

At the onset of the Great Depression, there were 38 canneries and 13 packing plants in Santa Clara County. 172,190 acres of land were engaged in crop production, approximately 66,000 of which were devoted to prunes and 20,000 to apricots. Orchards and related industries were hit particularly hard during the 1930s, in which time the prices of California's specialty crops fell further and faster than those of basic agricultural commodities, such as wheat.[7] The local workforce, already facing low wages and an unprecedented level of unemployment, additionally dealt with an influx of farmers displaced by the Dust Bowl. Low wages, substandard working conditions, and poor job security catalyzed unrest and labor mobilization in the 1930s, and union membership and related activism increased substantially during the Depression years. In August 1931, the Cannery and Agricultural Workers' Industrial Union organized a strike of nearly sixteen thousand cannery workers in the Santa Clara Valley, in protest of a 20% wage decrease.[8] By the end of the decade, employees in all San José canneries were unionized.[9]

The fruit industry gradually recovered from the effects of the Great Depression, but military training and home-front production associated with World War II played the greater role in the Santa Clara Valley's economic resurgence. The San Francisco Bay area was the gateway to the Pacific theater of the war, and thousands of military personnel cycled through the area for training and processing at Moffett Field and shipyards along the coastline. Numerous industrial plants that constructed marine engines and landing craft were established in Sunnyvale and Santa Clara; the two largest military contractors were the Food Machinery Company and the Joshua Hendy Iron Works, whose contracts totaled $289 million. The growth of these wartime industries changed both the physical and ethnic landscape of the Santa Clara Valley. The industrial plants employed local residents, including women, who had previously found work in orchards and canneries; they in turn were frequently replaced by Mexican Americans and *braceros*, who were Mexican nationals working in the United States under the auspices of the Mexican Farm Labor Agreement. At the same time, the Santa Clara Valley's agricultural acreage shrank, as farms and orchards were converted to industrial plants and housing for the region's increased population.[10]

***Postwar Industrialization in the Santa Clara Valley***

The population and economy of the Santa Clara Valley grew rapidly in the years following World War II, as the economic focus of the region shifted from agriculture to electronics and manufacturing. Orchards were gradually replaced with residential subdivisions and shopping centers, and rural roadways evolved into freeways to accommodate the massive influx of people and commercial activity that accompanied increasing industrialization and the related population boom.[11]

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[5] Ibid., 40-41.

[6] Ibid., 43-44.

[7] Glenna Matthews, "The Apricot War: A Study of the Changing Fruit Industry during the 1930s," *Agricultural History* 59, no. 1 (January 1985): 25-29.

[8] Kevin Starr, *Endangered Dreams: The Great Depression in California* (New York: Oxford University Press, 1996), 69-70.

[9] David Bacon, "Roots of Social Justice Organizing in Silicon Valley," *El Reportero*, May 23, 2016.

[10] Glenna Matthews, *Silicon Valley, Women, and the California Dream: Gender, Class, and Opportunity in the Twentieth Century* (Stanford, California: Stanford University Press, 2003), 82-88.

[11] Matthews, *Silicon Valley, Women, and the California Dream*, 46-47.

The growth of the region's electronics sector and the transformation of the "Valley of the Heart's Delight" into "Silicon Valley" in the postwar years was driven by a growing number of defense contracts and Stanford University officials' efforts to institutionalize a relationship between the research university and the federal government. Stanford contributed significantly to the economic success of the Santa Clara Valley in the postwar years. From the university's inception in 1891 near Palo Alto, its founders had intended the school to have a strong emphasis on science, engineering, and practical applications. The 1927 appointment of radio engineer Frederick Terman, who would be named Stanford's dean of engineering in 1944 and provost in 1955, reinforced this mission. Terman educated and encouraged a number of students who ultimately established some of the most successful electronics firms in the country, including William Hewlett and David Packard of the Hewlett-Packard Company. Terman's greater contribution to the Santa Clara Valley, however, was his effort to build a "university-government alliance" for defense-related research.[12] Terman played a crucial role in Stanford's efforts to secure defense research contracts from the federal government in the late 1940s; he believed that government partnerships were the future of U.S. research institutions and American military security. In the ensuing Cold War, the government granted billions of dollars in federal contracts to universities and firms in the Santa Clara Valley, which guided the technological and economic advancements of the region.[13]

Research-oriented industry, much of it funded by Department of Defense grants during the Cold War, fueled the Santa Clara Valley's transformation from an agriculture- and extraction-based economy to one based on scientific research and technological advancement. A synergistic relationship developed between the region's universities, the federal government, local municipalities, and the local business community. In 1951, Stanford University founded the Stanford Industrial Park, which attracted major tenants including Hewlett-Packard, Eastman Kodak, Varian Associates, the Sylvania Products Company, the Philco-Ford Corporation, General Electric, and the research division of the Lockheed Corporation (later Lockheed Martin Corporation). Other major firms, such as the Fairchild Camera and Instrument Corporation, Memorex Corporation, and National Semiconductor, all located their facilities nearby in communities like Palo Alto, Menlo Park, Sunnyvale, and Mountain View. Municipal governments, for their part, incentivized industrial growth by providing tax relief and other incentives, and by clearing tracts of land for development. Underpinning all of this growth were grants and contracts extended by the Department of Defense; by the late 1970s, Santa Clara County received $2 billion annually in federal defense contracts, a trend that continues today.[14]

Approximately 800 electronics businesses emerged in Santa Clara County between 1950 and 1974, drawn by government contracts, municipal governments' incentives, and a desire to locate themselves alongside the companies and university programs that had established themselves as leaders in the field.[15] The development of integrated circuitry, which made possible the pocket calculator, and the microprocessor, which led to the proliferation of computers for consumer use, solidified the region's position as the electronics industry leader in the 1960s and beyond. The growth of the technology and industrial sectors led Santa Clara County's population to swell from just under 300,000 residents in 1950 to over one million in 1970, one year before journalist Donald Hoefler coined the term "Silicon Valley."[16]

***Site History***

In contrast to its current suburban environment, the site of 3065 Bowers Avenue was characterized by agricultural production and a sparsely developed rural setting for approximately a century before Intel began to construct its facilities there in the early 1970s. A map of Santa Clara County published in 1876 illustrates a prevailing land use pattern of small agricultural plots north of the Southern Pacific Railroad (SPRR) corridor (now used by Caltrain). As early as this period, a parcel generally corresponding to

[12] David Naguib Pellow and Lisa Sun-Hee Park, *The Silicon Valley of Dreams: Environmental Injustice, Immigrant Workers, and the High-Tech Global Economy* (New York: New York University Press, 2002), 60.

[13] Ibid., 61; John M. Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940* (Berkeley, CA: University of California Press, 1992), 133-134.

[14] Pellow and Park, *The Silicon Valley of Dreams*, 60-61; Archives & Architecture, *County of Santa Clara Historic Context Statement*, 46.

[15] Pellow and Park, *The Silicon Valley of Dreams*, 62.

[16] Leslie Berlin, *Troublemakers: Silicon Valley's Coming of Age* (New York: Simon & Schuster, 2017), 73.

the currently-day boundaries of 3065 Bowers Avenue was defined by Kifer Road to the south (the current location of Central Expressway) and Coffin Road (now Bowers Avenue) to the west (Figure 28). The map identifies S. Morrison as the owner of the parcel, and the naturally meandering path of Campbell Creek (later called Saratoga Creek) traversed the property from southwest to northeast, after which it turned due north and met the Guadalupe River at Alviso. Rural residences dotted the countryside, which included strawberry fields. The nearest community node consisted of a school and churches along Lawrence Station Road (present-day Lawrence Expressway) approximately one mile to the west of the subject property.[17]

Over the ensuing several decades, the agricultural landscape of fields and orchards that characterized northwestern Santa Clara County appears to have changed little. The current site of 3065 Bowers Avenue remained well outside the boundaries of the City of Santa Clara; the nearest institutional landmark was the Agnews State Hospital, a psychiatric facility built in 1885 in a then-rural location approximately 1.5 miles to the east. Although topographic maps published in the first half of the twentieth century do not identify what varieties of agricultural products were grown surrounding the subject property, aerial photographs taken in the immediate post-World War II period capture the unmistakable tree rows of an orchard surrounding two large buildings near Saratoga Creek (Figure 29).[18] Later accounts have identified it as a pear orchard.[19]

Although the orchard remained in place for more than 20 additional years, the pace of suburban development along the fringes of Santa Clara and San José accelerated in the 1950s and 1960s. By 1958, housing tracts had appeared south of the SPRR corridor, replacing the earlier agricultural landscape with single-family homes neatly arranged along gently curving streets. Santa Clara's northern boundary with Sunnyvale also shifted north during this same period, crossing Kifer Road for the first time and encompassing the subject property.[20] Concomitant with suburban development in the Santa Clara Valley, the late 1960s saw the construction of Central Expressway, a county highway running generally east-west between Palo Alto and the western edge of San José. The route of the expressway approached the subject parcel from the west and, before reaching Coffin Road, angled to the southeast; it straightened due east again immediately north of Kifer Road. The new expressway thus clipped off the southwestern corner of the subject property and gave it its current irregular boundary (Figure 30). The route of the expressway passed just south of the orchard buildings on the property, but they remained standing for the time being.[21]

In 1970, the Intel Corporation announced that it had purchased the 27-acre property at Central Expressway and Coffin Road for a new five-building headquarters complex. Intel, a swiftly growing semiconductor company specializing in memory chips, had been founded less than two years earlier in nearby Mountain View. Due to its ambitious product development efforts, the company was outgrowing its original office space in a one-story building on Middlefield Road much sooner than the duration of its five-year lease there; Intel identified the need for far larger facilities to house the growing company. Reflecting Intel leaders' exceptionally confident vision for the company's future, the original plans for the headquarters called for a five-building complex that would provide 400,000 square feet of space to house administration and production functions—overseen by more than 2,000 employees. (In contrast, Intel employed just over 200 people in 1970.) Intel envisioned that the headquarters would require 3,000 parking spaces, and the total cost for the complex was forecast to reach between $15 million and $20 million.[22]

Despite its grand ambitions, however, Intel advanced its plans only incrementally and began by constructing a single building on the property, which was designed by San Francisco architecture firm Simpson, Stratta and Associates (Figure 31). The City of

[17] *Historical Atlas Map of Santa Clara County, California* (San Francisco: Thompson & West, 1876), Map 2.
[18] USGS, Image AR1HR0000020147 (3065 Bowers Avenue, Santa Clara, California), 1948, https://earthexplorer.usgs.gov/.
[19] Intel Corporation, *Thirty-Five Years of Innovation* (Santa Clara: Intel Corporation, 2003), 8; Leslie Berlin, *Troublemakers: Silicon Valley's Coming of Age* (New York: Simon & Schuster, 2017), 149.
[20] National Environmental Title Research, Aerial Photograph (3065 Bowers Avenue, Santa Clara, California), 1956, https://www.historicaerials.com/viewer.
[21] UCSB Library, Image cas-2310_1-227 (3065 Bowers Avenue, Santa Clara, California), 1968, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.
[22] "Intel Corp. Breaks Ground for New Headquarters," *Palo Alto Times*, April 21, 1970, 9; "18-Month-Old Intel Maps Plant Expansion," *Electronic News*, April 6, 1970, 59.

Santa Clara issued Intel a building permit for the project in 1970, and Howard J. White of Palo Alto served as general contractor. The two-story, nearly 80,000-square-foot building was completed the following year.[23]

The building housed nearly all of Intel's functions at this time, including administration, engineering, and fabrication. As described the company's 1971 annual report,

> Our physical plant grew by 300% in 1971 with completion of our new 78,000 square foot Santa Clara headquarters. Substantial start-up costs were incurred, but the facility allowed us to install improved new wafer fabrication and assembly areas while maintaining continuous production at our original Mountain View plant. The new facility has modern work areas with clean rooms, controlled air flowers and special fume, chemical and solvent waste disposal systems to greatly reduce air and water pollution. Installation of automated mask drawing equipment reduces the time required to produce new circuit designs. Altogether we boosted production of Large Scale Integrated circuits (LSI) to 3½ times that of 1970. Our new facilities should be adequate for production demands through 1972.[24]

Intel anticipated that, as the company built out its new campus, SC1 ultimately would house engineering exclusively. Original plans were to construct a five-story building at the property that would hold its corporate headquarters, but it was never built—so SC1 remained the company's nucleus into the early 1990s.[25]

Photographs of SC1 taken shortly after its construction illustrate the raised and tiered design of the building mass (Figure 32) surrounded by the relatively minimal site treatments designed by landscape architecture firm Royston, Hanamoto, Beck, and Abey: these comprised a grass lawn southwest of the building, undulating pedestrian walks and curb lines, several young trees, and planting areas containing low shrubs or other ground-covering vegetation. Light standards with outward-facing glass panels stood alongside the pedestrian walks. Notably, the lawn contained a prominent identification sign that bore Intel's corporate logo (Figure 33). Befitting SC1's location in automobile-reliant Santa Clara County, surface parking lots surrounded the building (Figure 34)—although a portion of the pear orchard remained standing east of SC1 for the time being.[26]

Within Intel's first year of occupancy of SC1, one of its interior fabs was the site of a milestone in the history of the global electronics sector: the completion of the Intel 4004 microprocessor. Within the few years that followed the launch of the 4004, Intel's "Bowers campus" (named after Bowers Avenue, the new name selected for the morbid-sounding Coffin Road along the property's western boundary) expanded, although not yet matching the complete vision Intel had unveiled in 1970. In the summer of 1973, the company received permits to erect a two-story industrial building and office addition on the property.[27] The resulting facility, SC2, replaced the portion of pear orchard that remained immediately to the east of SC1 (Figure 35) and provided Intel with additional office and manufacturing space to support the company's growing needs.[28] Research completed for this report did not identify the architecture firm responsible for designing SC2, although it is possible that Simpson, Stratta & Associates was also selected due to some similarities its design had with SC1's.

During the decade that followed Intel's initial headquarters construction on Bowers Avenue, the site evolved from a still-lonely corporate outpost along Central Expressway to just one component of a blanket of suburban fabric that stretched to the southern end of San Francisco Bay. Although residential tracts characterized the development pattern to the south, numerous other electronics firms ultimately followed Intel's lead and established campuses between the SPRR corridor and U.S. 101.

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[23] "Intel Corp. Breaks Ground," 9; "18-Month-Old Intel," 59; City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue, accessed January 18, 2023, https://www.santaclaraca.gov/our-city/departments-a-f/community-development/building-division.

[24] *Intel Annual Report 1971* (Santa Clara: Intel Corporation, 1971), 2.

[25] "Intel Corp. Breaks Ground," 9; "18-Month-Old Intel," 59.

[26] Berlin, *Troublemakers*, 149.

[27] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.

[28] Berlin, *Troublemakers*, 149.

Parcels at the intersection of Central Expressway and Bowers Avenue near the Intel campus attracted firms such as Avantek, Cobilt, and Applied Materials.[29] Speculatively built industrial parks also contributed to northern Santa Clara's landscape of low-density facilities that housed high-technology companies and auxiliary firms.[30]

Despite the tremendous amount of construction that occurred surrounding Intel's Santa Clara campus, by 1980 the complex still comprised only the original two buildings: SC1 and SC2. Intel's original plans to construct further engineering, production, and administration facilities on the Bowers Campus did not progress as the company moved its attention to locations further afield from Santa Clara: it constructed a fab in Livermore, California in 1973 and, over the next several years, built new domestic facilities in Oregon, Arizona, and New Mexico.[31] The northern half of the property contained a surface parking lot, but much of the southern half remained undeveloped during the 1980s and the first half of the 1990s (Figure 36). Saratoga Creek appears to have been redirected into the channelized Saint Thomas Aquinas Creek a few blocks to the east by 1980.[32]

The 1990s saw two major developments related to Intel's facilities in Santa Clara. The first was the opening of a new headquarters building within a site already operated by Intel, located along Mission College Boulevard just north of U.S. 101 in Santa Clara.[33] The new headquarters, referred to as the Mission Campus, opened in 1992. The second development was the construction of a large new facility in the Bowers Campus, known as M2—the earliest constructed portion of Main Fab south of SC2. The City of Santa Clara issued a building permit in 1996 for an "addition," which appears to refer to M2.[34] As captured in aerial photographs taken in the late 1990s, M2 was surrounded by loading areas and bulbous lawns (Figure 37). As the 1990s progressed, Intel built new support facilities that projected from both SC1 and SC2, including the gas pad building at the southeast corner of SC1 and various volumes at the south and east sides of SC2.[35]

Aerial photographs document a pattern of incremental evolution on the Bowers Campus from the turn of the twenty-first century to the present day, as Intel continued to adapt its existing facilities and to construct new ones to meet the company's evolving technical needs.[36] M3 expanded Main Fab to the east in c.2004, when Intel received a permit to construct an addition to an existing manufacturing building (M2) that would add more than 10,000 square feet. A wide range of FSE appeared incrementally—particularly east of SC2 and Main Fab beginning around 2010. The pace of new construction and alterations at the property is illustrated by the high (and ever increasing) volume of building permits documented in the City of Santa Clara's permit record: 45 between 1970 and 1979; 86 between 1980 and 1989; 286 between 1990 and 1999; 202 between 2000 and 2009; 613 between 2010 and 2019; and 365 since the start of 2020 alone.[37]

The property currently houses Intel Mask Operations, a process that uses templates to replicate the circuitry designs on chips that are used throughout Intel's manufacturing processes across the globe.

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[29] "Avantek Breaks Ground for Major Expansion," *Palo Alto Times*, June 26, 1972, 6; Myron K. Myers, "Cobilt Introduces New System for Making Semiconductors," *Palo Alto Times*, April 30, 1974, 12; Myron K. Myers, "Applied Materials Boasts No Across-the-Board Competition," *Palo Alto Times*, May 3, 1974, 11.

[30] "Industrial Park Construction Begins," *Palo Alto Times*, September 16, 1974, 8.

[31] Intel Corporation, *Thirty-Five Years*.

[32] UCSB Library, Image gs-vezr_2-54 (3065 Bowers Avenue, Santa Clara, California), 1980, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.

[33] "Intel Corp. To Break Ground," *San Francisco Chronicle*, October 24, 1990, C2.

[34] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.

[35] UCSB Library, Image napp-3c_10542-118 (3065 Bowers Avenue, Santa Clara, California), 1999, https://mil.library.ucsb.edu/ap_indexes/FrameFinder/.

[36] National Environmental Title Research, Aerial Photograph (3065 Bowers Avenue, Santa Clara, California), 2004, 2010, 2014, 2016, 2018, 2020, https://www.historicaerials.com/viewer.

[37] City of Santa Clara Building Department, Permit Record for 3065 Bowers Avenue.

***Intel Corporation and the Microprocessor Revolution***

Intel Corporation has become a household name across the United States due to the company's role developing and manufacturing microprocessors used in many of the personal computers (PCs) that have emerged on the consumer market since the 1980s. The company's influence and financial success, however, stretch back several decades to the initial period of Silicon Valley's development after World War II. Intel's roots are tightly intertwined with the histories of two of the earliest pioneers in the Bay Area electronics industry: the Shockley Semiconductor Laboratory and Fairchild Semiconductors. William Shockley founded the first of these in Mountain View in the mid-1950s and was a pioneer in adapting silicon as a semiconductor medium for transistors.[38] Whereas germanium was then the standard material used for this application, Shockley recognized that silicon had the potential to be cheaper to manufacture and more efficient. Although Shockley failed to successfully develop a silicon-based transistor for the commercial market, engineers at other electronics firms were inspired to continue work on the concept. One of these companies was Fairchild Semiconductors, which was established by eight engineers who defected from Shockley Semiconductor Laboratory in 1957. By utilizing techniques developed by Bell Labs to enhance the conductivity of silicon, the Fairchild engineers focused their energies on further developing the silicon transistor for use in industrial and consumer electronics. Under the direction of Robert Noyce, an MIT-trained physicist, the Fairchild team homed in on developing an integrated circuit: a single unit that could perform multiple electronic processes that previously were accomplished by separate types of transistors. Following a period of trial and error, Fairchild developed the world's first planar silicon-based integrated circuit (also known as a microchip) in 1960.[39]

The introduction of the integrated circuit profoundly altered the landscape of the electronics industry. Journalist Tom Wolfe has described that the milestone "made it possible to create miniature computers, to put all the functions of the mighty ENIAC [the earliest digital, programmable computer] on a panel the size of a playing card. Thereby the integrated circuit opened up every field of engineering imaginable, from voyages to the moon to robots, and many fields that had never been imagined[.]"[40] Fairchild's integrated circuit was widely preferred over its competitors' and thus catalyzed tremendous growth and profits for the company. Noyce became generator manager of Fairchild's microchip division and skillfully steered it as Fairchild moved into a phase of rapid staff recruitment and market expansion, leading the company to approach $200 million in annual sales.[41]

Despite his continued financial success and promotions at Fairchild, Noyce eventually tired of its corporate structure and his increasingly administrative role there. After more than a decade at the company, Noyce teamed with fellow Shockley and Fairchild veteran Gordon Moore and assembled more than $2 million in investor capital to establish a startup venture the pair ultimately named Intel Corporation (Intel for short). At first, Noyce and Moore kept their vision for Intel open-ended: they wished to develop technologies based in integrated circuits, but to focus on "product areas that none of the manufacturers are supplying."[42] Furthermore, the company did not focus its energies on new technological research but instead, as historian Ross Knox Bassett has written, "took a broad range of product concepts that were in the minds of knowledgeable people in the industry and quickly converted them into real products."[43] Upon the launch of its initial development phase, the Intel founders rented vacant office space in the Union Carbide Company's modest one-story building at 365 Middlefield Road in Mountain View and hired a comparatively small crew of engineering and administrative staff. Perhaps the most notable engineer they

[38] Transistors are responsible for conveying electrical signals and are considered the building blocks of electronic devices.
[39] Michael S. Malone, *The Intel Trinity: How Robert Noyce, Gordon Moore, and Andy Grove Built the World's Most Important Company* (New York: Harper Business, 2014), eBook accessed electronically through the Multnomah County Library.
[40] Tom Wolfe, "The Tinkerings of Robert Noyce: How the Sun Rose on the Silicon Valley," *Esquire*, December 1983, accessed electronically, https://web.stanford.edu/class/e145/2007_fall/materials/noyce.html.
[41] Ibid.; Malone, *The Intel Trinity*.
[42] Quoted in Marge Scandling, "2 of Founders Leave Fairchild, Form Own Electronics Firm," *Palo Alto Times*, August 2, 1968, 6.
[43] Ross Knox Bassett, *To The Digital Age: Research Labs, Start-Up Companies, and the Rise of MOS Technology* (Baltimore: Johns Hopkins University Press, 2002), 209.

recruited at this time was Andy Grove, a Hungarian émigré, Holocaust survivor, and future Intel chief operating officer (CEO) who had worked closely with Gordon Moore at Fairchild.[44]

During its first two years of business based in Mountain View, Intel quickly defined a workplace culture based on flexibility, technical acumen, and intensity. Strict hierarchies were shunned. The Intel founders promoted a model of product development that has defined the company for decades: continual and overlapping development efforts that all but depended upon the obsolescence of its previous semiconductor achievements. Sometimes the company had no market in mind for its products but instead prized the culture of innovation for its own sake. This model reflects the assumption that semiconductor technology would become ever more powerful, following Gordon Moore's observation—commonly known as Moore's Law—that semiconductor developers would be able to double the number of transistors per chip every twenty-four months.[45] The hypothesis supported an ethic of furious innovation. Years later, an Intel manufacturing manager summarized conditions at the company: "Working in Fab is like cycling through a revolving door. Just when you learn to build one product, a newer one with all its technical challenges needs to be manufactured—better, cheaper, and three months earlier than originally planned."[46]

As the 1960s ended, Intel staff operated under startup conditions as engineers swiftly began to develop new electronic product ideas in the building's fab (named Fab 1) on Middlefield Road, with a particular focus in the area of semiconductor memory (or data storage). The company's earliest efforts in this area brought forth the first Intel product, a static random access memory chip called the 3101. The chip's release was a milestone for the young company, but its true importance was the revenue stream it drew that fed Intel's other development efforts. The first product that put Intel on the map was the 1103 dynamic random-access memory chip, released in 1970. A single 1103 memory chip contained 4,000 transistors and functioned more efficiently than the ceramic cores that previously had been used to store computer memory. In large part due to the 1103 memory chip, Intel quickly became a force in the semiconductor industry: its 1970 revenue was $4 million, but by 1972 its yearly sales surpassed $20 million. In short order, the company already appeared to be accomplishing its new slogan: "Intel Delivers."[47]

While still occupying its space in Mountain View, Intel was courted by a Japanese calculator company, Busicom, with a proposition that fundamentally altered the realm of electronics technology. Busicom was in the process of developing a new electronic calculator line and requested that Intel design a central processing unit (CPU) comprising 12 separate chips. Intel engineers Stan Mazor, Ted Hoff, and Federico Faggin were assigned to the project, which was one of the company's major initiatives as it moved to its new purpose-built Santa Clara headquarters building in 1971. The team proposed a novel solution to meet Busicom's specifications: a series of only four chips, one of which was a four-bit CPU chip that incorporated multiple processing functions that previously were accomplished by separate chips. This approach increased processing speeds and reduced costs; furthermore, the chip was programmable, meaning a single chip design could be mass produced for varied applications. Technology historian Leslie Berlin describes the innovation in the following way:

> A programmable, general-purpose logic device, the microprocessor was revolutionary. Before, designers at customer firms had built their systems by choosing and connecting individual microchips, each with a different dedicated function, on a board. Changing the system required changing the physical arrangement of the chips, or hardware. Intel's new microprocessor systems required something very different—changes made not by moving physical objects but by reprogramming the instructions stored in program memory. The microprocessor, in other words, brought

[44] Ibid.; Malone, *The Intel Trinity*.
[45] "Gordon Moore," Intel Corporation, accessed February 14, 2023, https://www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html.
[46] Quoted in Christine Finn, *Artifacts: An Archaeologist's Year in Silicon Valley* (Cambridge: The MIT Press, 2001), 10.
[47] Malone, *The Intel Trinity*; Wolfe, "The Tinkerings of Robert Noyce;" Berlin, *Troublemakers*, 73; "Explore Intel's History," Intel Corporation, February 9, 2023, https://timeline.intel.com/.

> software to the semiconductor industry. In doing so, it placed new demands on customers, most of whom were experienced hardware designers but unfamiliar with using computer programs to solve their systems problems.[48]

The microprocessor chip that the team completed in a fab in the heart of SC1, called the Intel 4004, dramatically shrank the physical hardware required to process complex computing calculations: the 4004 could accomplish the same processing functions as the ENIAC, which filled an entire room. Intel secured an agreement with Busicom that allowed the American company to market the 4004 chip commercially for non-calculator applications, and it became the first microprocessor available on the consumer market when it was launched in 1971. Although it had limited application at first, the 4004 paved the way for Intel's later industry dominance.[49]

In several other respects, 1971 was a momentous year for Intel. The company released the first erasable programmable read-only memory (EPROM) chip, which could retain stored data after a power supply was shut off. It was the first year that Intel made a profit, and it had its initial public offering. Furthermore, Intel's relocation to its new headquarters in a predominantly undeveloped area near the edge of Santa Clara, at the same time as it developed its pioneering microprocessor chip, was a symbolic step away from Fairchild Semiconductor's sphere of influence in Mountain View. The new headquarters expanded the company's fab space and, by isolating it from its competitors, allowed Intel to focus on its company culture and growth. The campus also moved Intel further away from Mountain View's Wagon Wheel Bar, a popular watering hole for semiconductor engineers where trade secrets could be swapped, and where defections were planned.[50]

The release of the 4004 and construction of the Santa Clara headquarters confirmed Intel's status as a dominant presence in the semiconductor industry during the early 1970s, a mere few years after the company's founding. During the decade that followed, the company invested heavily to maintain and expand the dominance it had rapidly built. In 1972, Intel made its international manufacturing debut when it constructed an assembly plant in Malaysia. (In subsequent years, the company built other facilities abroad in countries such as the Philippines, Barbados, Singapore, and Israel.) In 1973, Intel opened a silicon wafer fabrication facility known as Fab 3 in Livermore, California, where the company introduced the head-to-toe white clean gowns, popularly known as "bunny suits," that became emblematic of its public brand identity almost twenty-five years later. Fab 3 was the first of many fabrication and assembly plants that the company ultimately built domestically, which expanded its physical footprint far beyond its nucleus in Santa Clara.[51]

In short order, Intel developed its second microprocessor, an eight-bit chip named the 8008: it was released in 1972, just four months after the 4004 had hit the market. The 8008 had 50% more transistors and was eight times as fast a processor as the 4004, so it represented a significant milestone of its own. According to journalist Michael S. Malone, however, it took time for potential customers in the military, aerospace, and industrial sectors "just to get their heads around the idea of a handful of chips replacing a wall of magnetic ring cores or a motherboard or two filled with logic and memory chips."[52]

Even as consumers slowly began to understand the microprocessor's potential, Intel continued to leap into new development efforts that built upon the company's earlier innovations. In particular, Federico Faggin envisioned a single microprocessor chip that combined the four chips that had supported each the 4004 and the 8008. That product, the Intel 8080, was completed in

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[48] Berlin, *Troublemakers*, 147.
[49] Wolfe, "The Tinkerings of Robert Noyce;" "Explore Intel's History;" "Intel: A Look Back on the Early Years," Intel Corporation, November 17, 2011, https://newsroom.intel.com/editorials/intel-a-look-back-on-the-early-years/; Michael Kanellos, "The Microprocessor Turns 40: Intel's Monumental Accident," *Forbes*, November 15, 2011, https://www.forbes.com/sites/michaelkanellos/2011/11/15/the-microprocessor-turns-40-intels-monumental-accident/.
[50] Malone, *The Intel Trinity*; "Explore Intel's History;" Bassett, *To the Digital Age*, 201-202.
[51] "Explore Intel's History;" Intel Corporation, *Thirty-Five Years*.
[52] Malone, *The Intel Trinity*.

1974 and offered far greater versatility for consumers than Intel's first two microprocessors. As Faggin described it, "The 8080 really created the microprocessor market. The 4004 and 8008 suggested it, but the 8080 made it real."[53] Both the 8008 and the 8080 chips were released by Intel when 3065 Bowers Avenue was its primary product development and fabrication facility.

During the second half of the 1970s, Intel sailed through its ten-year anniversary. The company saw continued market supremacy in the semiconductor industry, largely supported by its innovative memory chips. Even so, microprocessors remained an important area of development. A sixteen-bit microprocessor, the 8086, launched in 1978 and offered ten times the processing power as the company's prior milestone, the 8080. The 8086 was notable as the first Intel microprocessor designed with the help of a computer. Another aspect that distinguished the 8086 from Intel's earlier microprocessors was that it utilized an architecture that more easily accommodated adaptation for future product generations, meaning Intel did not need to start from scratch when embarking on the design of a new and more powerful microprocessor. Even more, Intel initiated a well-funded marketing campaign, known as "Operation Crush," that heralded the 8086's performance capabilities and strengthened Intel's brand recognition.[54]

There remains little doubt that the most consequential result of the launch of the 8086 microprocessor, coupled with Operation Crush's public information bonanza, was Intel's successful bid in 1981 to provide microprocessors for IBM's first generation of commercially available PCs. Even as Intel's memory chip business faced growing competition and weakened market shares, the nascent but promising PC market created a viable pathway for Intel's continued industry relevance. IBM quickly captured a corner on the PC market by utilizing the Intel 8088, a lower-power and lower-cost variant of the 8086. After selling one million PCs in two years (then considered a tremendous success), IBM amassed a 15% stake in Intel by 1983. At the same time, Intel secured contracts with some of IBM's competitors in the PC market, such as Compaq. Furthermore, the adaptability of the 8086's architecture allowed Intel to develop the x86 family of three successive microprocessors: the 80286 (1982), i386/80386 (1985), and i486/80486 (1989). IBM incorporated all three into its subsequent PC models. The i486 was the first manufactured by Intel that contained more than one million transistors. As a result of Intel's technical advances and vigorous marketing efforts, its microprocessors were the acknowledged standard-bearer in the PC consumer market by the close of the 1980s.[55]

The flipside of Intel's microprocessor achievements, however, was its exit from the memory chip business. The company had continued to make advances in DRAM chips in the early 1980s, but by mid-decade Japanese manufacturers had entered the American market with chips priced so low that domestic producers struggled to compete. Intel made the decision to curtail its DRAM line in 1985, as did its competitor Texas Instruments. Intel's pivot away from this traditionally strong sector allowed it to place more energy into microprocessor development for PCs and supercomputing. Intel also made inroads with application-specific integrated circuits, a type of customized chip that differed from Intel's general-use chips.[56]

Under the leadership of new CEO Andy Grove, Intel entered its third decade riding a wave of unprecedented sales that followed the semiconductor industry slump of 1985 and 1986. The company secured contracts with automobile makers that fueled some of its growth, but its series of increasingly powerful microprocessors ensured that Intel's success remained closely tethered to the exploding PC market. Among the company's most important developments of the 1990s was the launch of the Pentium line, which included new generations of the Intel x86 family. The original Pentium debuted commercially in 1993, followed by the Pentium Pro in 1995, the Pentium II in 1997, the Pentium III in 1999, and the Pentium 4 in 2000.[57]

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[53] Quoted in "Explore Intel's History."
[54] Malone, *The Intel Trinity*.
[55] Robert Metz, "Intel Set To Rake in the Chips," *San Francisco Sunday Examiner & Chronicle*, November 20, 1983, D3; "Explore Intel's History."
[56] Henry Schulman, "NEC Corp. Will Increase Chip Prices," *Oakland Tribune*, December 2, 1985, B1; "Explore Intel's History."
[57] "Explore Intel's History."

Whereas Intel had been largely focused on high technology industries through the 1980s, highly effective brand strategies reoriented and expanded Intel's public profile. The company increasingly developed new products directly for the retail market, and it created engaging campaigns like "Intel Inside" in 1991 that explained processing for the layperson and strengthened brand loyalty among PC buyers. Intel's most memorable public imprint in the 1990s was likely its "Bunny People" advertising campaign, which debuted in 1997 alongside the Pentium II. To match the technological dynamism of the processor, television and print ads reimagined the company's white bunny-suited fab workers as candy-colored dancers boogying to a funk-music soundtrack. *Time* magazine's selection of Grove as its "Man of the Year" in 1997 further confirmed the high level of public recognition that Intel had earned in its nearly 30 years of doing business.[58]

True to Intel's adaptive nature, the company's twenty-first-century initiatives have enhanced computer processing capabilities and have developed new technologies for an evolving electronics industry. The turn-of-the-millennium dotcom bust brought a slump for tech companies worldwide, Intel included. However, Intel ably responded to emerging needs by pushing innovations in areas such as mobile computers, wireless networking, cloud computing, drone technology, and autonomous driving. Simultaneously, Intel continued to develop new Core processors that moved beyond the architecture of the Intel Premium in order to enhance the capabilities of PCs and supercomputers. Another of Intel's industry achievements in the twenty-first century was introducing the Ultrabook, a lightweight PC that married the benefits of traditional laptops and portable devices such as mobile phones and tablets. The sustained relevance of Intel's technological innovations is reflected in its annual revenues, which exceeded $70 billion in 2018.[59]

***Architect Overview: Simpson, Stratta and Associates***

Simpson, Stratta and Associates was a joint architecture, engineering, and planning firm founded by business partners and engineers Albert Simpson and James Stratta. The firm was active in the San Francisco Bay Area from 1952 until Simpson's death in 1976.

Albert T. Simpson was born on June 28, 1923 in San Francisco. Raised in Weaverville, he moved to the Bay Area to receive his graduate degree in civil engineering from Stanford University in 1948. Shortly after graduating, he enrolled in the American Society of Civil Engineers. In 1948, Simpson joined the structural engineering firm Hall & Pregnoff in Palo Alto. Pregnoff is known for creating the rating methodology for the University of California seismic risk mitigation policy, which is still used to this day.[60]

James L. Stratta was born on September 1, 1920, in Berkeley, and he remained in the Bay Area for the rest of his life. After graduating from Galileo High School in San Francisco in 1938, Stratta received his engineering education at the University of California at Berkeley. Shortly after graduating in 1943, Stratta began his career as a structural engineer. During World War II, he worked for the Ames Aeronautical Laboratory at Moffett Field outside of Mountain View. In 1947, he accepted a position with Hall and Pregnoff, where he met Albert Simpson.[61]

After working together at Hall & Pregnoff for nearly four years, Simpson and Stratta formed Simpson, Stratta and Associates in the early part of 1952. The firm operated until 1967 and held an office at 325 Fifth Street in San Francisco. In this time, the firm primarily was responsible for large-scale office parks, commercial buildings, and industrial facilities, including the Utah Construction & Mining Company South San Francisco Industrial Park (1961), General Mills' western operations headquarters in

[58] Ibid.

[59] Ibid.

[60] US World War II Draft Cards Database, 1940-1947, Ancestry, accessed electronically, Ancestry.com; "Gets Scholarship," *The Shasta Courier*, January 1, 1948, 8; "Albert Simpson Enrolled in Engineer Society," *The Peninsula Times Tribune*, December 8, 1948, 20; U.S. City Directory Records Database, 1948, Ancestry, accessed electronically, Ancestry.com; "Michael Victor Pregnoff," Pacific Coast Architectural Database, accessed February 14, 2023, https://pcad.lib.washington.edu/person/2978/.

[61] US Federal Census Records, 1930, Ancestry, accessed electronically, Ancestry.com; "Engineers Pick Stratta," *San Francisco Examiner*, January 1, 1962, 63; "Atherton Man To Head Engineers," *The Times*, December 26, 1961, 13.

South San Francisco (1962), Alec Membership Shopping Center in Palo Alto (1962) and Signetics Corporation Complex (1964). Prior to their commission for the original Intel building at 3065 Bowers Avenue in Santa Clara, the firm designed a new headquarters for the National Semiconductor Company in Santa Clara's National Industrial Park (1969). Perhaps as a result of its technical expertise in structural engineering, the firm does not appear to have gained a reputation for stylistic innovation, and its projects convey broad modernistic influences.[62]

Simpson, Stratta and Associates also gained a reputation as a city planning firm and was responsible for the design of a master plan for the City of Folsom in 1964. The firm's portfolio also included extensive planning efforts in Israel and England, in addition to California cities such as Fairfield, Arcadia, and National City. By the early 1960s, the firm employed approximately 35 people.[63]

In the first years of running the firm, Stratta was also an adjunct professor at the University of California at Berkeley's School of Architecture from 1952 to 1954. Stratta was elected president of the Structural Engineers Association of Northern California in 1962 and served for many years. Throughout his career as a structural engineer, Stratta was regarded as an expert on earthquake resistant structural design.[64]

The firm operated until Simpson died unexpectedly in a 1976 fire at the St. Francis Yacht Club, at the age of 53. After Simpson's death, Stratta dissolved the firm and continued to work on his own as an independent consultant in Menlo Park. Stratta died in 1994 at the age of 73.[65]

***Landscape Architect Overview: Royston, Hanamoto, Beck, and Abey***

The landscape architecture firm that contributed to the design of the original Intel headquarters facilities at 3065 Bowers Avenue was Royston, Hanamoto, Beck, and Abey. The firm—and particularly its founder, Robert Royston—is recognized as a significant innovator in Modernist landscape design in Northern California after World War II. According to a biographical description prepared by the Environmental Design Archives at the University of California, Berkeley:

> Robert Royston began practicing architecture in the offices of Thomas D. Church on weekends while he was a student in the landscape architecture program at the University of California, Berkeley. He continued to work for Church following his graduation. After returning from military service during World War II, he opened a firm with Garrett Eckbo. Royston taught in the landscape program at UC Berkeley from 1947-1951, teaching students such as Fran Violich, Roy Hanamoto (who became his partner), and Francis Dean. Royston joined with a number of partners over the years, eventually establishing the firm of Royston, Hanamoto, Alley & Abey in 1979, where he worked until his semi-retirement in 1998.[66]

Over the course of Royston's career, his firm evolved through multiple changes in name and partnership structure. In 1962, Eldon Beck, who had joined the firm in 1958, became a partner and the firm was renamed Royston, Hanamoto, Mayes & Beck. In 1966, David Mayes left the firm to open his own practice, and the following year associate Kazuo Abey was made partner. Thereupon the firm name changed once again to Royston, Hanamoto, Beck & Abey (RHBA).

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[62] "Atherton Man to Head Engineers," 13; "Great Folsom Planning Area Plan 1985," *The Folsom Telegraph*, August 4, 1966, 3; "New Factory Started for Electronics Firm," *San Francisco Chronicle*, October 5, 1969, C.

[63] "Status Report: City Master Plan One Year Away," *The Folsom Telegraph*, August 13, 1964, 1; "FCAC Completes City Master Plan Report," *The Folsom Telegraph*, February 6, 1964, 1; "Atherton Man to Head Engineers," 13.

[64] "Engineers Elect," *San Francisco Chronicle*, December 27, 1961, 37; "SF Engineer to Head Association," *The Peninsula Times Tribune*, January 19, 1967, 6.

[65] "SF Yacht Club Fire; Three Persons Dead," *Napa Valley Register*, December 21, 1976, 1; "Hyatt Suits Total $1 Billion," *Record Searchlight*, August 8, 1981, 6.

[66] "Royston, Robert N.," Environmental Design Archives, University of California, Berkeley, accessed February 17, 2023, https://archives.ced.berkeley.edu/collections/royston-robert.

Notable RHBA projects include many private residences, including Eichler homes, long range development plans for the University of California Lawrence Livermore National Laboratory (1968), University of California San Francisco Medical Center (1965), University of California, Santa Cruz (1961), and the following campus buildings on the UC Santa Cruz campus: Merrill College (1965-67), Cowell Student Health Center (1967), Faculty Commons (1969-1971), and Quarry Area (Theatre) (1967). Royston is also known for public park projects, particularly in communities along the San Francisco Peninsula and in the Santa Clara Valley.[67] The firm continues today as RHAA.

***Architectural Context: Late Modernism***

Late Modernism is less an architectural style than a broad design movement that encompasses multiple related aesthetic directions that evolved out of, and in opposition to, early and more orthodox streams of modern architecture such as the Miesian International Style. Characterized broadly, Late Modernism reflects designers' perception that the earlier forms of modernism had become stale, endlessly copied, and oftentimes synonymous with corporate interests: thus, design professionals began to exaggerate and hyperbolize the traditional principles of modernism in order to enliven the design movement. Often, this involved design strategies that elicited responses such as humor, awe, confusion, and even disgust. More commonly applied to commercial and industrial building types than to residences, Late Modernism purposefully eschewed ideal proportions, strict minimalism, cubic forms, and (in some instances) established standards of good taste.

American architectural historian and critic Charles Jencks was among the first writers to characterize Late Modernism in architectural design, which began to emerge as a recognizable movement in the mid-1960s. One of Jencks's key contributions was differentiating Late Modernism from the separate but related movement of Postmodernism. Proponents of Late Modernism "have, for the most part, taken the theories and style of their precursors to an extreme and in so doing produced an elaborated or mannered Modernism. By contrast Post-Modernists have modified the previous style, while building upon it, but in additional also rejected the theories almost completely."[68] In other words, Postmodernism combined Modernist influences with elements signifying earlier architectural trends (i.e., Classicism), whereas Late Modernism isolated the DNA of Modernism but "mutated" it into something identifiably different. Like orthodox forms of modernism before it, however, Late Modernism produced a vocabulary that ultimately was widely adopted and subsequently regarded as mainstream.

Jencks was partial to sometimes perplexing neologisms to refer to the various impulses he identified in Late Modernism, including Second Machine Aesthetic, Extreme Articulation, Forced Harmonization, Structure/Construction as Ornament, Elliptical Gridism, and Slick Skin/Op Effects.[69] Regardless of the exact terms used to describe them, examples of Late Modern architecture often feature the curtain wall envelope, compositional rigor, and/or stylistic austerity that characterize orthodox Modernism. However, Late Modernism typically avoided the International Style's perfect proportions, ideal cubic volumes, pristine surfaces, and sense of floatation. In contrast, the concepts that characterize Late Modernism include material experimentation, unconventional fenestration patterns, extreme repetition, and exaggerated or highly sculptural massing. A more recent overview of Late Modernism in California has simplified the movement into three primary categories: Glass Skin, Brutalism, and High Tech. Good examples in these categories are likely to have some or all of the broad character-defining features listed below.

**Glass Skin**

- Typically displays bold, sculptural forms, often with chamfers or cut-outs;
- May have sharply articulated angles and distinctive geometric forms;
- Smooth, continuous surfaces over the primary massing or entirety of the building;

[67] MacKenzie Bennett, Meredith Hall, and April Hesik, "Inventory of the Robert N. Royston Collection, 1941-1990," Environmental Design Archives, University of California, Berkeley, accessed February 22, 2023, https://oac.cdlib.org/findaid/ark:/13030/kt8b69q7nx/entire_text/.

[68] Charles Jencks, *Late-Modern Architecture* (New York: Rizzoli, 1980), 10.

[69] Ibid., 31-79

- Usually rendered in a single monochromatic palette or material;
- Glass skin encloses building in an all-over manner, or in certain instances set upon a base or plinth of a different material;
- Glass skins are typically of reflecting or mirrored glass paired to smooth grids mullions and muntins;
- Later glass skins may exhibit seamless neoprene glazing with no aluminum mullions or muntins visible;
- Window or door articulation may be subsumed into distinctive cladding or distinctive shape.

**Brutalism**

- Typically displays bold oversized angular shapes with sculptural and distinctive geometric forms to break apart the rectangular form;
- Unpainted exposed concrete, raked or smooth, dominating visible elevations.

**High Tech**

- Metal and glass exterior with a limited color palette of white, black, or grey;
- Artistically treated, deliberately exposed structural and infrastructural components (escalators, elevators, air ducts, structural systems) which may be painted in bright colors.[70]

***California Register of Historical Resources Evaluation***

**California Register Criterion 1 [Association with Significant Events]**
To be considered eligible for listing under Criterion 1, a property must be associated with one or more events important in a defined historic context. This criterion recognizes properties associated with single events, a pattern of events, repeated activities, or historic trends. The event or trends, however, must clearly be important within the associated context. Further, mere association of the property with historic events or trends is not enough, in and of itself, to qualify under this criterion: the specific association must be considered important as well.[71]

During the several decades that followed Intel Corporation's establishment in 1968, the company became an influential mainstay in the semiconductor and microelectronics industries and has supported major developments in multiple technology sectors, including the proliferation of PCs through its contracts with IBM and other manufacturers. Based on the work of historians and technology journalists, there appears little debate about Intel's importance within the context of Silicon Valley's development and the growth of the high technology sector worldwide during the post-World War II era: Ross Knox Bassett has written that Intel held the position of most important semiconductor manufacturer from its founding until at least the turn of the twenty-first century.[72] Experts in electronics have established Intel's significance by describing its pathbreaking technological advances and detailing the number of innovative and increasingly complex products that the company released continually since the turn of the 1970s. These innovations led to very rapid growth and enormous financial success for Intel, quickly bringing industry-wide recognition for its impactful product advances.

SC1, the initial building constructed within the campus at 3065 Bowers Avenue, was completed just a few years after the company's founding and operated as Intel's first purpose-built administrative headquarters and manufacturing facility after the company outgrew its original leased space in Mountain View. SC1 was emblematic of Intel's swift growth, which justified a larger headquarters and customized fabrication space. A fab within SC1 was where Intel engineers developed the world's first microprocessor, the Intel 4004, for its market launch in 1971. Over the next several years, the building served as Intel's

[70] Daniel Paul, *Los Angeles Citywide Historic Context Statement: Late Modern, 1966-1990*, SurveyLA: Los Angeles Historic Resources Survey, prepared for City of Los Angeles Office of Historic Resources, July 2020, 35-40.
[71] National Park Service, *How to Apply the National Register Criteria for Evaluation*.
[72] Bassett, *To the Digital Age*, 167.

headquarters as the company maintained its industry dominance in memory chips while continuing to reach microprocessor milestones with the release of the Intel 8008, 8080, and 8086. The last of these established the architecture for several generations of microprocessors that were instrumental in the proliferation of PCs during the 1980s and 1990s. By the time Intel moved to a new headquarters complex in 1992, the company had become a highly regarded pillar in the computing industry and was enjoying widespread brand recognition among members of the general public. Given that 3065 Bowers Avenue was Intel's headquarters and a core fabrication space for more than 20 years of market growth and technological innovation, the property is directly associated with Intel's role making computing a part of daily life around the globe. For these reasons, the property appears to have national-level significance under California Register Criterion 1.

**California Register Criterion 2 [Association with Significant Persons]**
This criterion "applies to properties associated with individuals whose specific contributions to history can be identified and documented." It identifies properties associated with individuals "whose activities are demonstrably important within a local, State, or national historic context," and is typically limited to those properties that have the ability to illustrate a person's important achievements.[73]

In consideration of Intel Corporation's historical importance, as established above under Criterion 1, the company has employed many professional engineers and administrators who have made distinguished contributions to the semiconductor industry and broader technology sector. Such individuals include: Robert Noyce and Gordon Moore, Intel co-founders and CEOs from 1968-1975 and 1975-1987, respectively; Andy Grove, Intel CEO during a momentous period of growth from 1987 to 1998; Federico Faggin, engineer who played a key role in developing Intel's groundbreaking microprocessors; and Dov Frohman, inventor of EPROM. These notable figures at Intel have been recognized individually for their scientific and industry accomplishments; for instance, Moore was awarded the National Medal of Technology and Innovation in 1990, and Grove was recognized as "Man of the Year" by *Time* magazine in 1997. However, the campus at 3065 Bowers Avenue is not a property type that is most apt to convey the accomplishments of a limited number of people, given that the significant pattern of events that took place there resulted from prolonged and successive product development efforts that involved the contributions of many employees rather than just a few. The importance of Noyce, Moore, Grove, and others in building the considerable influence of Intel within the semiconductor industry is best recognized by Criterion 1 significance. Therefore, the property does not appear to have significance under Criterion 2.

**California Register Criterion 3 [Architectural, Design, and Construction Significance]**
This criterion applies to properties that "embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction." "Distinctive characteristics" are the physical and design features that commonly recur in individual types, periods, or methods of construction. To be eligible, a property must clearly contain enough of those characteristics to be considered a true representative of a particular style. A master "is a figure of generally recognized greatness in a field, a known craftsman of consummate skill, or an anonymous craftsman whose work is distinguishable from others by its characteristic style and quality…. A property is not eligible as the work of a master, however, simply because it was designed by a prominent architect."[74]

The architectural designs of both SC1 and SC2 have elements of the broad Late Modern stylistic movement, which strove to advance the core tenets of orthodox Modernism utilizing a range of approaches that typically involve exaggeration and hyperbole. SC1 (1971) and SC2 (1974) have related design strategies that suggest Late Modern influences: specifically, both facilities have reverse-stepped massing, large expanses of opaque wall surface, and horizontal bands of dark-tinted glass. SC2 utilizes these elements in a more exaggerated fashion, whereas SC1 suggests brutalism through its use of concrete—particularly at the structural columns that rise to the roofline as shaped pilasters. SC1 and SC2 may express elements of the Late Modern

[73] National Park Service, *How to Apply the National Register Criteria for Evaluation*.

[74] National Park Service, *How to Apply the National Register Criteria for Evaluation*.

movement through their austere façade designs and material palettes, but neither volume fully embodies Late Modernism to the extent that would bestow California Register eligibility under Criterion 3. They are relatively simple interpretations of Late Modern architectural vocabulary, and neither exaggerates massing, façade articulation, or use of materials in a manner that is remarkable or surprising. The designs of SC1 and SC2 allowed them to function as industrial facilities, but as a result both have a relatively utilitarian aesthetic quality that limits their architectural interest. For these same reasons, neither SC1 nor SC2 has high artistic value.

Furthermore, the firm responsible for designing SC1—Simpson, Stratta and Associates—appears to have specialized in similar administrative, industrial, and commercial projects, many of which were similarly unremarkable. The firm's work was not widely covered in the press, and its founders were trained in structural engineering—such that it does not appear the firm was recognized for a notable stylistic viewpoint. Although the founders of Simpson, Stratta and Associates were capable professionals and were actively involved in their field, the firm does not appear to qualify as a master architecture firm. Research has not identified the designer(s) responsible for SC2, but its design is not a sufficiently inventive reworking of Modernist design principles that would suggest it as a good example of a master architect's body of work.

RHBA, the landscape architecture firm selected to design the landscape surrounding SC1 upon its construction from 1970-1971, is widely recognized for its considerable influence on modern landscape design in California. Although RHBA was involved in the Intel project, however, it does not appear that the firm's landscape design has high merit when viewed within the firm's body of work. Available photographs and aerial views of the campus during the 1970s indicate RHBA's design introduced generally curvilinear curb lines and pedestrian paths, custom-designed light standards, trees lined along SC1, granite paving, and low shrubs and ground covering plants. The character of the landscape was spare and generally Modernist but does not appear to have been an innovative use of plant materials, circulation, and hardscaping. Rather, the landscape appears consistent with the corporate nature of SC1 and had limited artistic merit. Considered together, the architecture and landscape architecture of the site represent a relatively modest example of post-World War II corporate campus design that lacked an inventive site layout, or impactful use of landscape elements. Additionally, subsequent construction surrounding SC1 has removed some the original RHBA landscaped elements, such as the original light standards and some circulation paths.

Lastly, Main Fab and all surrounding support facilities were constructed after the mid-1990s and are utilitarian in nature; many smaller buildings appear to be prefabricated. None of the buildings and structures built within the property subsequent to SC2 has any architectural elements that associate it with a particular design movement or style or suggests design mastery.

For these reasons, no facility within the property appears to meet the significance threshold established by Criterion 3.

**California Register Criterion 4 [Potential to Yield Information]**
Criterion 4 pertains to the potential for a resource to provide information on pre- and/or post-contact history and is generally applied to archaeological resources. In consideration of this criterion, no facility located at 3065 Bowers Avenue appears to fill a known data gap or research questions related to the history of Intel and the semiconductor industry that is not otherwise detailed in available primary and secondary historical sources. Therefore, the property does not appear to have significance under Criterion 4.

**Historic District Potential**
3065 Bowers Avenue contains numerous built components that include SC1, SC2, Main Fab, and numerous auxiliary facilities and FSE. With the exception of SC1 and SC2, no elements of the property appear to date to the identified 1971-1992 period of significance and therefore do not have a direct and meaningful association with the property's historically significant use as the Intel headquarters and a key fabrication facility. Therefore, 3065 Bowers Avenue is best characterized as an individual resource for the purpose of California Register eligibility: SC1 and SC2 are physically joined and together have a closely related development history and association with Intel's operations. Subsequent construction on the property postdates Intel's relocation to its new headquarters building in 1992, and therefore the property does not appear to contain a significant entity more than 45 years old that would be best characterized as a historic district.

**Period of Significance**
The period of significance for 3065 Bowers Avenue, associated with its Criterion 1 significance, spans from 1971 to 1992. This period begins with Intel's completion of SC1 at 3065 Bowers Avenue, at which point the company was already becoming established in the semiconductor industry for its memory chips and was actively working on the development of the pioneering microprocessor that it released as the Intel 4004. The period of significance ends with the completion of a new Intel headquarters campus on Mission College Boulevard, at which time the company moved its core administrative functions from the Bowers Campus. During this period, key components of the 4004 were developed within a fab space in SC1, and Intel built SC2 to expand its product development and fabrication capabilities to match its growing industry stature. During the years it was headquartered on Bowers Avenue, Intel continued to gain considerable influence in the technology sector and rapidly developed new semiconductor-based products that powered far-reaching advances in multiple technological spheres.

Intel's considerable industry influence has continued into the twenty-first century, but the Bowers Campus lacked a direct associative connection to the company's product advances after the company relocated its headquarters to the Mission Campus in 1992. After this time, the Bowers Campus became just one of many facilities located in the United States and abroad that supported Intel's many product development efforts, and SC1 and SC2 do not appear to have had special status in the eyes of the company.

Although the period of significance ends approximately thirty years prior to the date of this evaluation, the property still meets the significance threshold of the California Register that pertains to the recent past: that is, a resource "less than fifty years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance."[75] This contrasts with the requirements of the National Register, which requires that significance less than 50 years old must be deemed *exceptional* in order to support eligibility. Over the past thirty years, Intel's history and industry influence have been the subject of close study by historians of science and technology, as well as by journalists. Some of the key academic and journalistic works that describe Intel's historical significance are cited in this report, including Michael Malone's *The Intel Trilogy*, Leslie Berlin's *Troublemakers*, and Ross Knox Bassett's *To The Digital Age*. Based on the wealth of sources now available on the history of Silicon Valley and the semiconductor industry from the 1960s into the twenty-first century, it is already possible to understand the significant associations of 3065 Bowers Avenue during the entire period it housed Intel's headquarters from 1971 to 1992.

**Integrity Assessment**
An assessment of 3065 Bowers Avenue's integrity is presented below, relative to its Criterion 1 significance and 1971-1992 period of significance. This assessment focuses on SC1 and SC2, the two building volumes constructed within the property during the period of significance.

Location: None of the extant elements of the property at 3065 Bowers Avenue dating to the 1971-1992 period of significance appear to have been moved from their original locations within the parcel at the intersection of Bowers Avenue and Central Expressway. Therefore, the property retains high integrity of location.

Setting: At the time of SC1 and SC2's construction during the first half of the 1970s, 3065 Bowers Avenue was a relatively remote outpost near the edge of Santa Clara surrounded by little other low-density development. However, the fabric of suburban Santa Clara County quickly spread and surrounded the property, so that by the end of the period of significance (1992) 3065 Bowers Avenue contributed to a continuous spread of commercial and industrial development that reached as far north as San Francisco Bay. There appears to have been some continued change in the close vicinity of the property since 1992, including

[75] California Office of Historic Preservation, *California Register and National Register: A Comparison (for the purposes of determining eligibility for the California Register), Technical Assistance Series #6* (Sacramento: California Department of Parks and Recreation, n.d.), accessed February 17, 2023, http://ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf.

the construction of new three- to four-story buildings immediately to the east along Coronado Drive. However, the property's setting is still characterized by a suburban landscape of detached commercial and industrial buildings surrounding by surface parking lots, limited vegetation, and automobile roadways (including Central Expressway). Therefore, the property retains moderate integrity of setting.

Design: The design of 3065 Bowers Avenue has undergone numerous alterations during and subsequent to the property's period of significance. Although SC1 (1971; Simpson, Stratta and Associates) is the original volume constructed within the property, SC2 (1974; designer not determined) was built only a few years later and similar contributed to the historically significant accomplishments of Intel's early period of growth. These two volumes, joined by a hyphen, are the components of the property that date to the period of significance; both express a Late Modern architectural aesthetic characterized by reverse-stepped massing, as well as the use of concrete, metal panels, and dark-tinted glass to create distinctive façade compositions. The property also originally incorporated a subdued, generally Modernist landscape designed by influential landscape architecture firm RHBA: the landscape was characterized by curving curb lines and pedestrian paths, limited plantings of trees and shrubs, grass lawns, and areas of granite paving.

Major alterations to the exterior of SC1 and SC2 after 1992 include the construction of Main Fab adjoining the south façade of SC2 and the immense volume of FSE and loading areas built adjacent to both early building volumes. Despite many alteration campaigns, however, the original designs of SC1 and SC2 remain discernible. The installation of FSE at the exterior of SC1—as well as the construction of two new entrances at the volume's west façade—appears primarily to have utilized existing openings within the window bands and has not permanently removed features that are not still present across other façades. Similarly, the south and east façades of SC2 now feature numerous attached volumes and equipment, but the volume's primary massing and exterior appearance remain visible (particularly at the north and west façades). New volumes and equipment are clearly differentiated from the original volumes. Components of the original landscape design have been removed, but enough trees and planting areas immediately adjacent to SC1 and SC2 remain to contribute to the campus's 1970s design character.

The interiors of both SC1 and SC2 have been changed repeatedly for Intel's continued product development efforts. It appears that very few, if any, of the interior fab spaces remain from the period of significance. However, the property's significance relates to a long series of industry accomplishments associated with the property rather than to a single innovation developed in a particular interior space. Therefore, the repeated reconfigurations to the interiors of SC1 and SC2 does not detract adversely from the integrity of design: Intel has operated in the spirit of ongoing, intense innovation since the company's founding in 1968, and the changes to the property reflect that same ethos. For these reasons, the property retains moderate integrity of design.

Materials: The original material palettes of SC1 and SC2 are still recognizable. The installation of FSE and new facilities across the property has involved the removal of some exterior and interior fabric, but the exterior envelopes of both SC1 and SC2 are generally intact. SC1 retains its characteristic concrete pilasters and base tier, metal spandrel and frieze panels, and window bands; SC2 retains large expanses of metal panel walls and window bands. Visual inspection of the property did not identify any discernible exterior alteration that eliminated a particular material entirely, but rather all exterior materials are present across other façades. These material palettes continue to express the characteristics of a corporate headquarters and fabrication facility dating to the 1970s. Therefore, the property retains moderate integrity of materials.

Workmanship: Similar to its materials, the workmanship of the property has undergone some changes through the construction of adjacent building volumes after the period of significance. However, later construction and equipment all expresses a utilitarian character that supports the modern workmanship of the early building volumes, SC1 and SC2. Therefore, the property retains moderate integrity of workmanship.

Feeling: 3065 Bowers Avenue retains aspects of its historic feeling: in particular, SC1 and SC2 have extant Late Modern design elements and a suburban setting that express the qualities of a high-technology corporate facility from the early era of Silicon Valley's growth in the 1950s through 1970s. Although the post-1992 alterations to the property detract somewhat from its

feeling as the administrative headquarters of Intel, the many additions of new building volumes and FSE reinforce the property's historically significant role in innovative product development for the semiconductor industry. Therefore, the property retains moderate integrity of feeling.

Association: Integrity of association refers to the direct link a property holds with its historical or architectural significance. Although alterations to the property have diminished its various aspects of integrity to a degree, its integrity of association is supported by a sufficient degree of materials, setting, design, workmanship, materials, and feeling that date to the period of significance. 3065 Bowers Avenue retains aspects of its early corporate architecture, landscape architecture, and highly technical use so that the property remains directly linked to the accomplishments of Intel from 1971 to 1992. Therefore, the property retains moderate integrity of association.

The analysis presented above concludes that 3065 Bowers Avenue retains at least a moderate degree of all seven aspects of its integrity. Although the two buildings dating to the period of significance, SC1 and SC2, have been altered numerous times through the construction of new volumes and associated FSE, this assessment finds that the alterations have not yet rendered the property unable to express its broad corporate and manufacturing character from the period 1971-1992. Because the property is significant for its association with significant events, its evaluation may utilize an integrity test proposed by the National Park Service: whether "a historical contemporary would recognize the property as it exists today."[76] In light of the considerable amount of original fabric that exists at the exterior of SC1 and SC2, it is highly likely that employees of Intel and other observers familiar with the property during its period of significance would be able to identify 3065 Bowers Avenue in its current form.

For these reasons, this evaluation finds that 3065 Bowers Avenue retains sufficient overall integrity to convey its significance under Criterion 1 for its period of significance of 1971-1992. Therefore, the property is eligible for listing in the California Register as an individual resource.

**Historic District Potential**
3065 Bowers Avenue contains numerous built components that include SC1, SC2, Main Fab, and numerous auxiliary facilities and FSE. With the exception of SC1 and SC2, no elements of the property appear to date to the identified 1971-1992 period of significance and therefore do not have a direct and meaningful association with the property's historically significant use as the Intel headquarters and a key fabrication facility. Therefore, 3065 Bowers Avenue is best characterized as an individual resource for the purpose of California Register eligibility: SC1 and SC2 are physically joined and together have a closely related development history and association with Intel's operations. Subsequent construction on the property postdates Intel's relocation to its new headquarters building in 1992, and therefore the property does not appear to contain a significant entity more than 45 years old that would be best characterized as a historic district.

**Character-Defining Features**
A character-defining feature is an aspect of a built resource's design, construction, or details that is representative of its function, type, or architectural style. Generally, character-defining features include specific building systems, architectural ornament, construction details, massing, materials, craftsmanship, site characteristics, and landscaping built or installed within the period of significance. In order for an important historical resource to retain its significance, its character-defining features must be retained to the greatest extent possible.

Character-defining features of 3065 Bowers Avenue include those dating to the 1971-1992 period of significance and include the following:

- Site
  - Property location at the intersection of Bowers Avenue and Central Expressway;

[76] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 48.

- Location of SC1 and SC2 near the center of the parcel;
- Visual primacy of SC1 and SC2 within the property;
- Extant original landscaped elements, including granite pavers, pedestrian circulation paths, curvilinear curblines, and planting beds adjacent to the north, west, and south façades of SC1 and the north façade of SC2 (vegetation not original);
- Orientation of SC1 and SC2 facing surface parking lots to the north;

- SC1
  - Rectangular plan and reverse-stepped massing with flat roof;
  - Late Modern architectural design consisting of horizontal tiers;
  - Two-story height with basement;
  - Partially excavated and exposed basement level;
  - Shaped concrete support columns that transition to pilasters;
  - Concrete base tier;
  - Grooved metal panel cladding at the spandrel and frieze;
  - Bands of tinted windows held in anodized aluminum frames;
  - Entrances at the north and south façades featuring concrete landing platforms, steps, support columns, and canopies clad in grooved metal panels;
  - Presence of interior corridors providing access to technical fabrication spaces (although configuration and finishes have been altered);

- SC2
  - Rectangular footprint and reverse-stepped massing with flat roof;
  - Late Modern architectural design;
  - Two-story height;
  - Predominant use of metal panel cladding, arranged as broad opaque horizontal bands;
  - Narrow horizontal ribbons of angled, tinted windows held in aluminum frames;
  - Recessed, fully glazed entrance vestibule at north façade with concrete landing;
  - Hyphen connection to SC1 with fully glazed curtain walls and shaped concrete supports; and
  - Presence of interior corridors providing access to technical fabrication spaces (although configuration and finishes have been altered).

The character-defining features of the property do not include Main Fab, equipment yards and fences/walls, various forms of FSE, or other support facilities located adjacent to SC1 and SC2. Furthermore, the configuration of surface parking lots within the parcel dates to the period of significance and generally supported Intel's use of the site, but it was not central to the significant use of the building or directly associated with the specific design features that identify the property as Intel's headquarters.

***Conclusion***

The subject property at 3065 Bowers Avenue appears to be eligible for listing in the California Register under Criterion 1 (association for significant events) for its association with Intel's critical role developing the semiconductor industry during the second half of the twentieth century. The company made pathbreaking innovations at its headquarters facility at 3065 Bowers Avenue in Santa Clara that revolutionized the microelectronics sector and paved the way for the greater integration of computer processing in everyday life around the globe. The property retains sufficient integrity to convey its significance under California Register Criterion 1, with a period of significance of 1971-1992. Due to its eligibility for listing in the California Register, the property qualifies as a historical resource for the purposes of CEQA review.

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Figure 2. West façade of SC1, viewed facing northeast
Source: ARG, January 2023

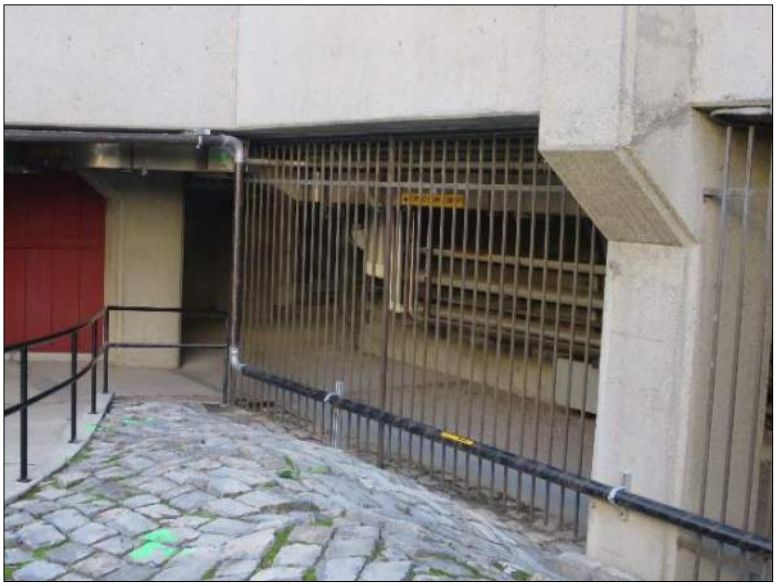


Figure 3. View of typical basement-level equipment, metal grating, and shaped concrete structural column, viewed at the east façade
Source: ARG, January 2023

Figure 4. Façade arrangement of pilasters, base, spandrel, and frieze, viewed in profile at the east façade
Source: ARG, January 2023

Figure 5. Primary (north) façade, viewed facing southeast
Source: ARG, January 2023

Figure 6. Entrance centered on the north façade, featuring concrete landing, canopy, steps, ADA ramp, and planting beds
Source: ARG, January 2023

Figure 7. West façade, viewed facing east
Source: ARG, January 2023


Figure 8. South façade, viewed facing northeast
Source: ARG, January 2023

Figure 9. Entrance at the center of the south façade, featuring original canopy and non-original doors and metal gangway
Source: ARG, January 2023

Figure 10. East façade and adjacent courtyard north of the hyphen
Source: ARG, January 2023

Figure 11. Non-original finishes in a typical first-floor corridor in SC1
Source: ARG, January 2023

Figure 12. SC2's typical exterior configuration of window bands separating broad, opaque areas of metal panel cladding, viewed at the north façade
Source: ARG, January 2023

Figure 13. North façade of SC2, viewed facing southeast; adjacent landscaping is visible in the foreground
Source: ARG, January 2023

Figure 14. First-floor entrance at the center of the north façade, featuring a recessed vestibule with concrete landing, steps, and ADA ramp
Source: ARG, January 2023

Figure 15. West façade of SC2, viewed facing northeast from the interior courtyard; a fenced equipment yard is at left, and the first-floor cafeteria window band is at center and right
Source: ARG, January 2023

Figure 16. West end of SC2's south façade, adjacent to its intersection with Main Fab; FSE stands in the foreground
Source: ARG, January 2023

Figure 17. The center of the east façade, as seen from an adjacent paved area; typical FSE and other support facilities are present across the façade and in its vicinity
Source: ARG, January 2023

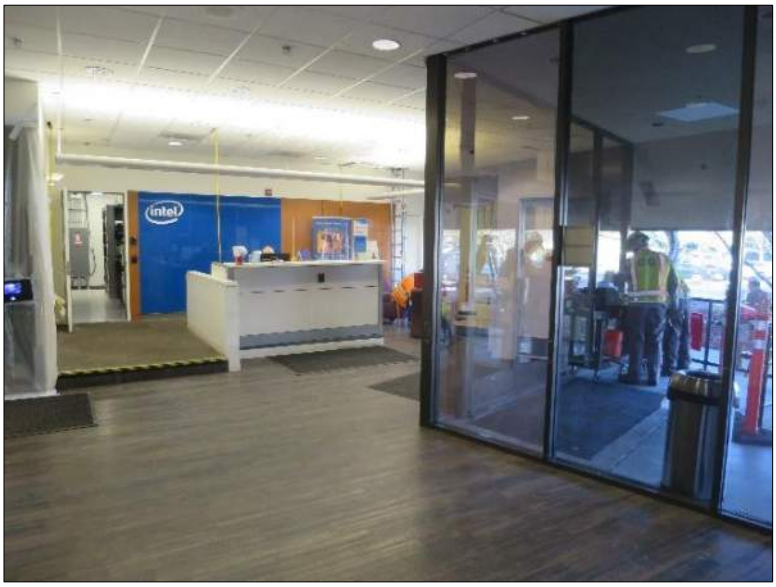



Figure 18. Contemporary finishes within the reception lobby inside SC2's primary entrance
Source: ARG, January 2023

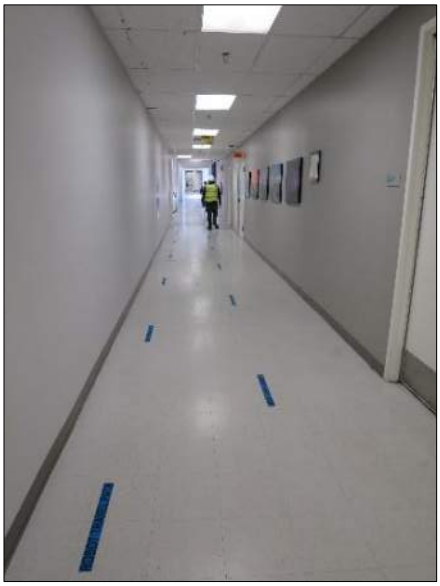


Figure 19. Layout and finishes of a typical interior corridor at the first floor of SC2
Source: ARG, January 2023

Figure 20. North face of the hyphen between SC1 and SC2, viewed facing south from the interior courtyard
Source: ARG, January 2023

Figure 21. Second-floor walkway through the hyphen, viewed facing west from SC2 towards SC1
Source: ARG, January 2023

Figure 22. Northern portion of Main Fab's west façade, including the projecting volume with an entrance at its angled corner
Source: ARG, January 2023

Figure 23. Concrete walkway and canopy at the northeast corner of Main Fab
Source: ARG, January 2023

Figure 24. Finishes within a typical corridor in Main Fab
Source: ARG, January 2023

Figure 25. Typical mobile trailer located near the eastern parcel boundary, currently serving an office role
Source: ARG, January 2023

Figure 26. Prefabricated gabled sheds lining the southern perimeter of the property, near the southeast corner of Main Fab, viewed facing northeast
Source: ARG, January 2023

Figure 27. Specialized detached structure placed within the parking lot north of SC1, viewed facing southeast
Source: ARG, January 2023

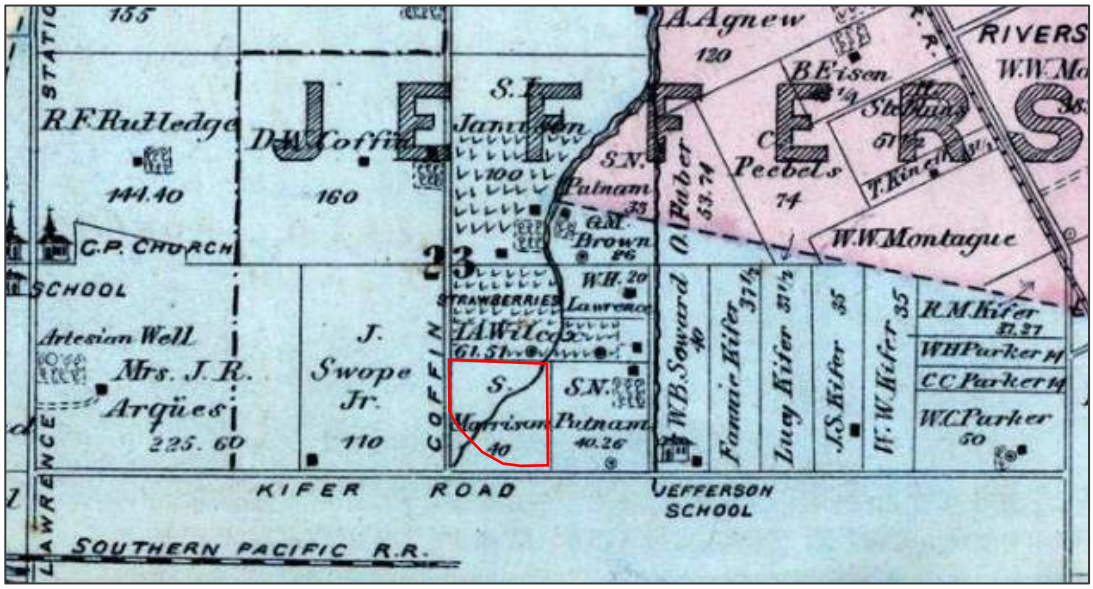



Figure 28. Detail of 1876 map of Santa Clara County, showing the subject parcel outlined in red. North is up.
Source: *Historical Atlas Map of Santa Clara County, California* (San Francisco: Thompson & West, 1876), edited by ARG

Figure 29. 1948 aerial photograph of the subject property (outlined in red) and its environs, characterized by orchards and other agricultural land uses; the SPRR corridor is visible near the bottom of the frame. North is up.
Source: USGS, edited by ARG

Figure 30. 1968 image of the subject property, outlined in red, showing residential tract development south of the SPRR corridor and the newly constructed Central Expressway bisecting the parcel. North is up.
Source: UCSB Library, edited by ARG

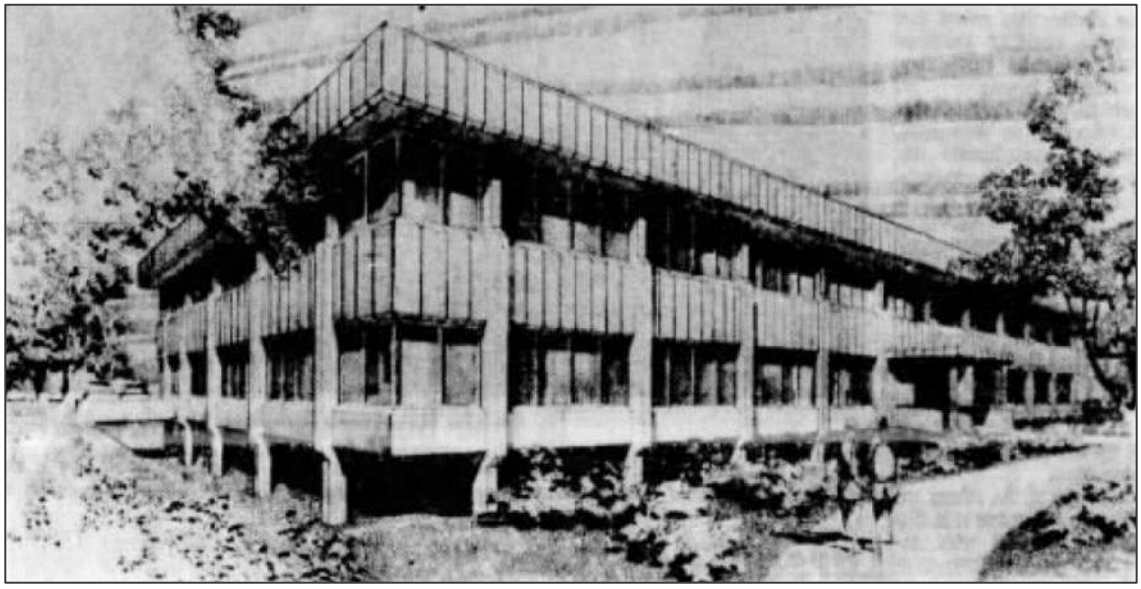


Figure 31. Rendering of SC1's design published when Intel announced plans for its five-story headquarters complex in Santa Clara
Source: *Palo Alto Times*, April 21, 1970


Figure 32. Intel employees gathered to the southwest of SC1, c.1971, soon after the building was constructed; the west and south façades are visible.
Source: Intel Corporation


Figure 33. West and south façades of SC1, with planting beds and identification sign in the foreground, c.1971
Source: Silent Icons of the Silicon Valley

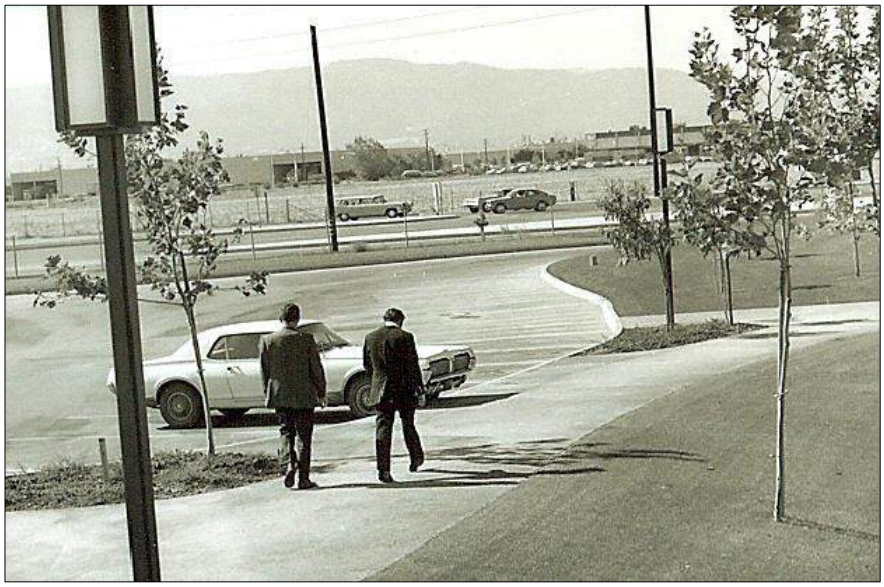


Figure 34. Intel founders Gordon Moore and Robert Noyce walking along the parking lot southwest of SC1, with adjacent properties and the Santa Cruz Mountains in the background
Source: Intel Corporation

Figure 35. SC1 (at center) and SC2 (at right) photographed in 1975
Source: Creative Commons

Figure 36. 1980 aerial photograph, illustrating SC1 and SC2 on the Bowers Campus (outlined in red) surrounded by parking lots to the north, and undeveloped land along the southern parcel boundary. Up is north.
Source: University of California Santa Barbara Library, edited by ARG

Figure 37. 1999 aerial photograph of the Bowers Campus, outlined in red, depicting the newly constructed M2 south of SC2. Up is north.
Source: University of California Santa Barbara Library, edited by ARG

# APPENDIX D: PROPOSED PROJECT RENDERINGS

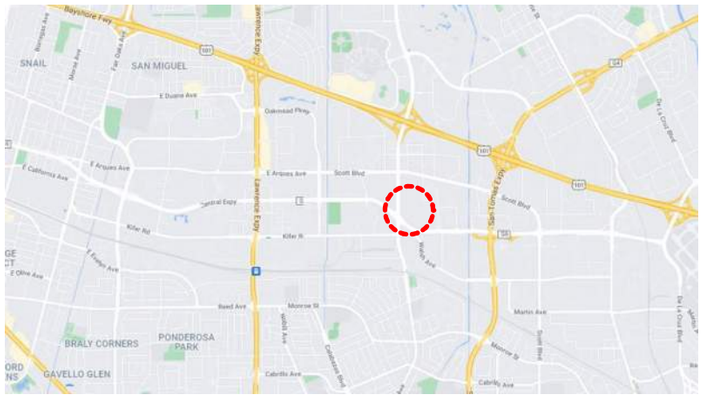
INTEL MASK OPERATIONS SANTA CLARA

# CENTRAL UTILITY BUILDING

**File No. 22TMP-000361**

Intel Corp 3065 Bowers Ave, Santa Clara, CA 95054

## PROJECT LOCATION




## CONCEPT VIEW

## SCOPE OF WORK SUMMARY

- Central Utility Building (CUB) to serve the existing & planned equipment at the SC1 cleanroom facility.
- Site Area: 1 Acre of the southwest corner of the Bowers campus / Total Site Area 1128204 SF
- Total Floor area 14,800 square feet / Building footprint 13,200
- Height 50 feet
- The proposed building will house chillers, cooling towers, pumps and piping, instrumentation and control equipment, emergency backup generators, and other mechanical equipment to support existing operations.

## PROJECT TEAM

GLUMAC

TWINSTEPS ARCHITECTURE

TETRA TECH

ccpc

| REV. NO. | REVISION DESCRIPTION | APPROVED | DATE |
|---|---|---|---|


TWINSTEPSARCH.COM
408.850.0220

111 NORTH MARKET STREET
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JOB #: SJC-22-001
CONTACT: M.M.

TWINSTEPS ARCHITECTURE


CA – DMS

intel

PROJECT SPONSOR(S)
CALIFORNIA TECHNOLOGY & MANUFACTURING GROUP
3065 BOWERS AVENUE
SANTA CLARA, CA 95054-3035



**CB1-ARCHITECTURAL**
**CUB PROJECT USE**
**PERMIT APPLICATION**
**PACKAGE**

| WORK ID NO. | MODEL NAME | SHEET NAME |
|---|---|---|
| | XBWCB1-AAA-000-A0-00000-TSA-DM | CB1-G-0000 |
| OLD NAME(S) | | EQT CODE / DRAWING SCALE |

LOOKING EASTWARD FROM BOWERS

LOOKING SOUTHWARD

| REV. NO. | REVISION DESCRIPTION | APPROVED | DATE |
|---|---|---|---|


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408.850.0220

111 NORTH MARKET STREET
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JOB #: SJC-22-001
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CA – DMS


INTEL CORPORATION
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3065 BOWERS AVENUE
SANTA CLARA, CA 95052-8058




# CB1 - ARCHITECTURAL
# CUB BUILDING

## RENDERED VIEWS

| WORK ID NO. | MODEL NAME | SHEET NAME |
|---|---|---|
| | XBWCB1-AAA-000-A0-00000-TSA-DM | CB1-A0-0915 |
| OLD NAME(S): | | EQT CODE / DRAWING SCALE |

LOOKING NORTHEAST FROM ABOVE

LOOKING NORTH AT ELECTRIC YARD AREA

| REV. NO. | REVISION DESCRIPTION | APPROVED | DATE |
|---|---|---|---|


TWINSTEPS ARCHITECTURE

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SANTA CLARA, CA 95052-8058




# CB1 - ARCHITECTURAL
# CUB BUILDING

## RENDERED VIEWS

| WORK ID NO. | MODEL NAME | SHEET NAME |
|---|---|---|
| | XBWCB1-AAA-000-A0-00000-TSA-DM | CB1-A0-0916 |
| OLD NAME(S) | | EQT CODE / DRAWING SCALE |

LOOKING EAST FROM ABOVE BOWERS

LOOKING NORTH AT ELECTRIC YARD AREA FROM OPPOSITE SIDE OF BOWERS/CENTRAL INTERSECTION

| REV. NO. | REVISION DESCRIPTION | APPROVED | DATE |
|---|---|---|---|


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# CB1 - ARCHITECTURAL
# CUB BUILDING

## RENDERED VIEWS

| WORK ID NO. | MODEL NAME | SHEET NAME |
|---|---|---|
| | XBWCB1-AAA-000-A0-00000-TSA-DM | CB1-A0-0917 |
| OLD NAME(S): | | EQT CODE / DRAWING SCALE |

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