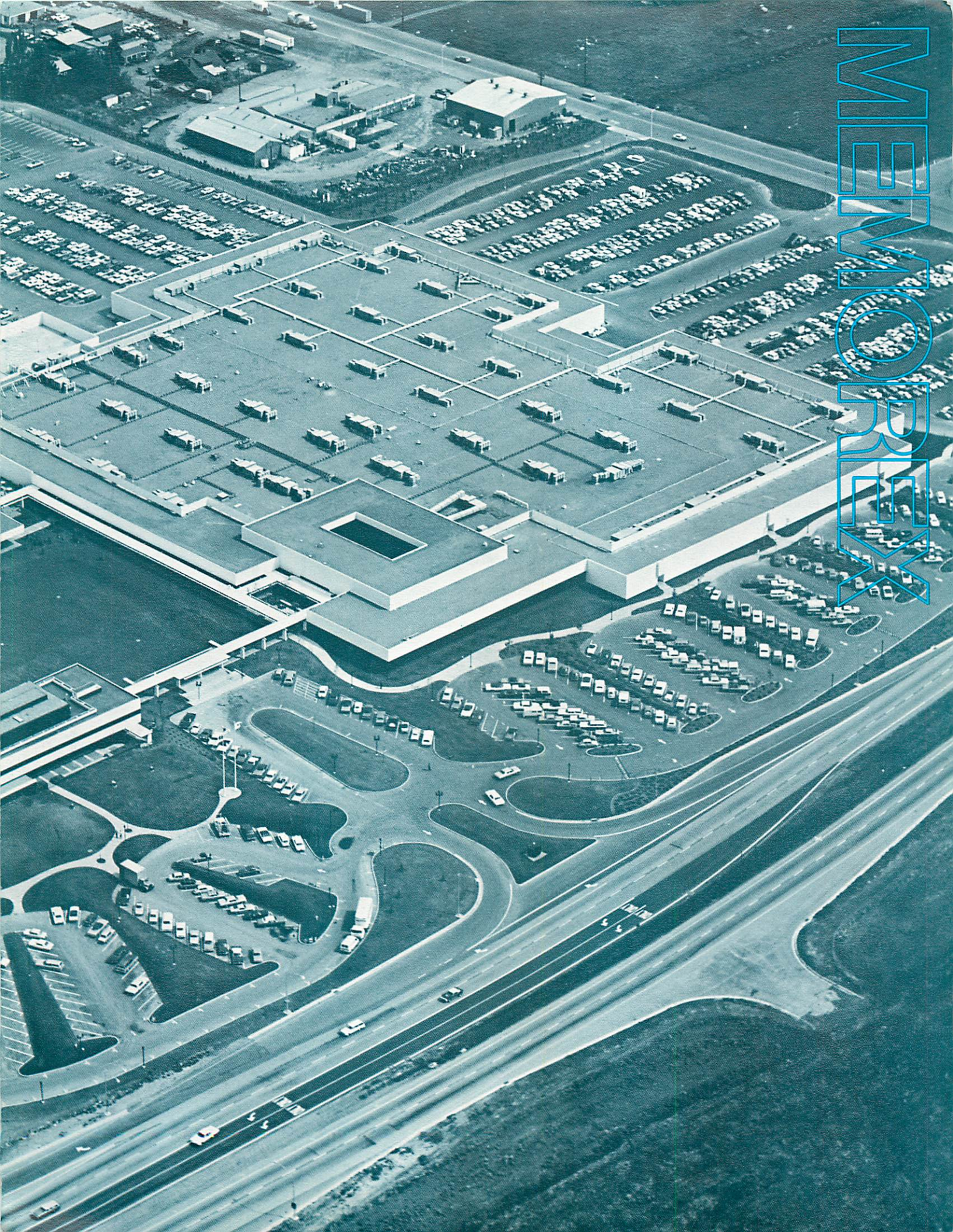

MEMOREX

Tour Guide to the San Tomas Facilities

Introduction

Memorex was founded just 10 years ago, and today we are a leading independent supplier of computer equipment and media, and a major employer in Santa Clara County.

Our extensive marketing activities have carried Memorex products and our reputation for quality into nearly every major country in the world. The Company has been headquartered in Santa Clara since its earliest days, and just recently moved into our newest and largest plant site, at the corner of the San Tomas and Central Expressways.

The Memorex Administration Building, our world headquarters, occupies the focal point of the 54-acre San Tomas complex, facing the two expressways. This building houses most of the Company's officers, the Corporate staff, the International Group headquarters, and sections of Equipment Group and Consumer Products Marketing.

The majority of the 750,000 square-foot San Tomas facilities serve Equipment Group (MEG) administration, engineering, manufacturing, research and development and warehouse operations.

About half of the Company's 6000 employees work at the San Tomas site.

MEG is currently manufacturing five main product lines: Disc Files, Disc File Control Units, Microfilm (COM) Systems, Communication Terminals and Terminal Control Units. These products fit into the category of computer peripheral equipment—equipment which is used with a computer to enter or extract data from the system.

Basically, a disc file (or disc drive) is used with a computer in much the same way that a record player is used in a music system. The disc file is connected to a computer and a disc pack is placed in the file. The pack spins around and read/write heads transfer data from the disc to the computer, and from the computer to the disc.

Disc file controllers (officially named Model 661 Storage Control Units) meter the flow of data between a computer and up to nine Memorex Model 660 Disc Files. Together, the 661 and 660 units comprise the 3660 Disc Storage System.

The main piece of equipment in our COM System is the 1603 Microfilm Printer. Our printer connects to a computer, so output can be printed directly onto microfilm.

The usual computer output medium is paper. In comparison, microfilm offers substantial savings in storage and handling costs. The 1603's printout rate is ten thousand 132-character lines per minute (nearly ten times the speed of most present line printers) with about 2 percent of paper's bulk.

Besides the 1603 Printer, the COM System includes microfilm processors, viewers, view/printers and duplicators. Microfilm supplies for the system are made in the Micrographics Division, which has a new plant one block west of the San Tomas site.

Communication Terminals are like typewriters which can be used to communicate by telephone with a computer at another location. They are operated by businesses which need to use a computer but don't have one or don't have one which is programmed to handle certain types of data.

Like the Disc File Control Unit, the Memorex 1270 Terminal Control Unit serves as a "buffer" between a computer and up to 96 remote terminals.

Some of these products will be demonstrated along the tour route, and you will be able to see all of them in various stages of completion in the manufacturing areas.

Building 10 Tour

Area A—Fabrication Shop

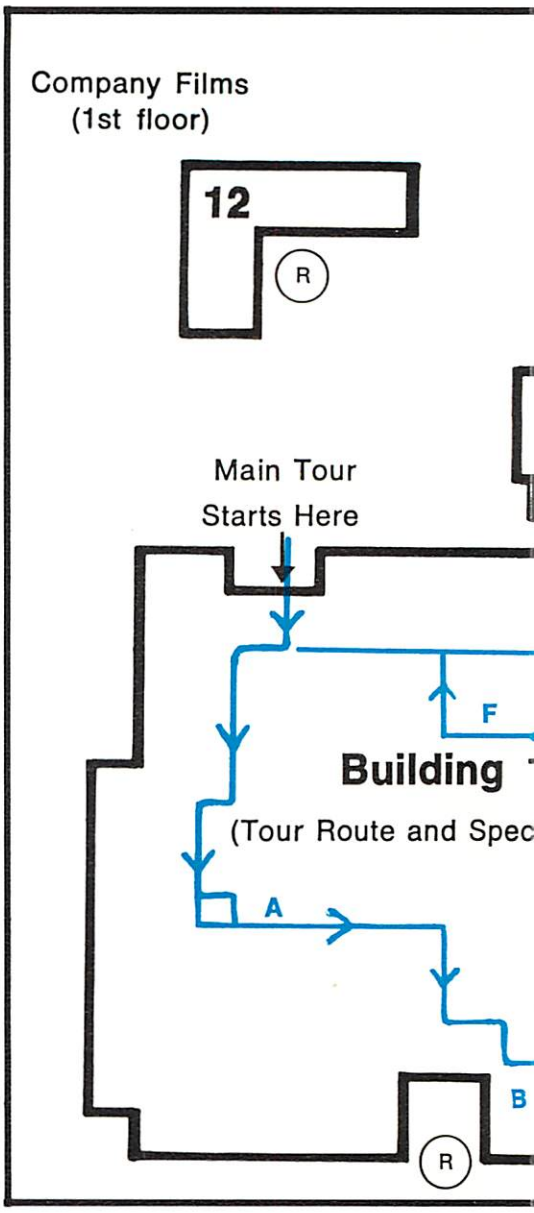
The Fabrication Shop is a component manufacturing section which supplies machined and sheet metal parts to the assembly areas. This Shop also is able to furnish protection for proprietary processes and can respond to emergency and special requirements of our product line.

Among the large machines in this area are:

Warner/Swasey Automatic Chucking Machine performs cutting, drilling, and tapping operations. There are six automatic feed selections from 36 available feeds. These are pre-set into the machine prior to making a part.

Cincinnati E/C Grinder performs the final shop operation which provides the Memorex Disc Drive with a perfect spindle. This machine can grind to an accuracy of .000025 (25 millionths) of an inch.

Wiedemann Turret Punch Press is numerically controlled by a tape. The machine will punch up to 30 holes per minute in various (pre-selected) sizes and shapes, from 24 separate stations in the machine.



Heald Precision Machining Centers. All machine functions, including spindle speed and feed are controlled by a punched paper tape which is "read" by an electronic reader in the control unit.

Area B—Electrical Mechanical Sub-Assembly

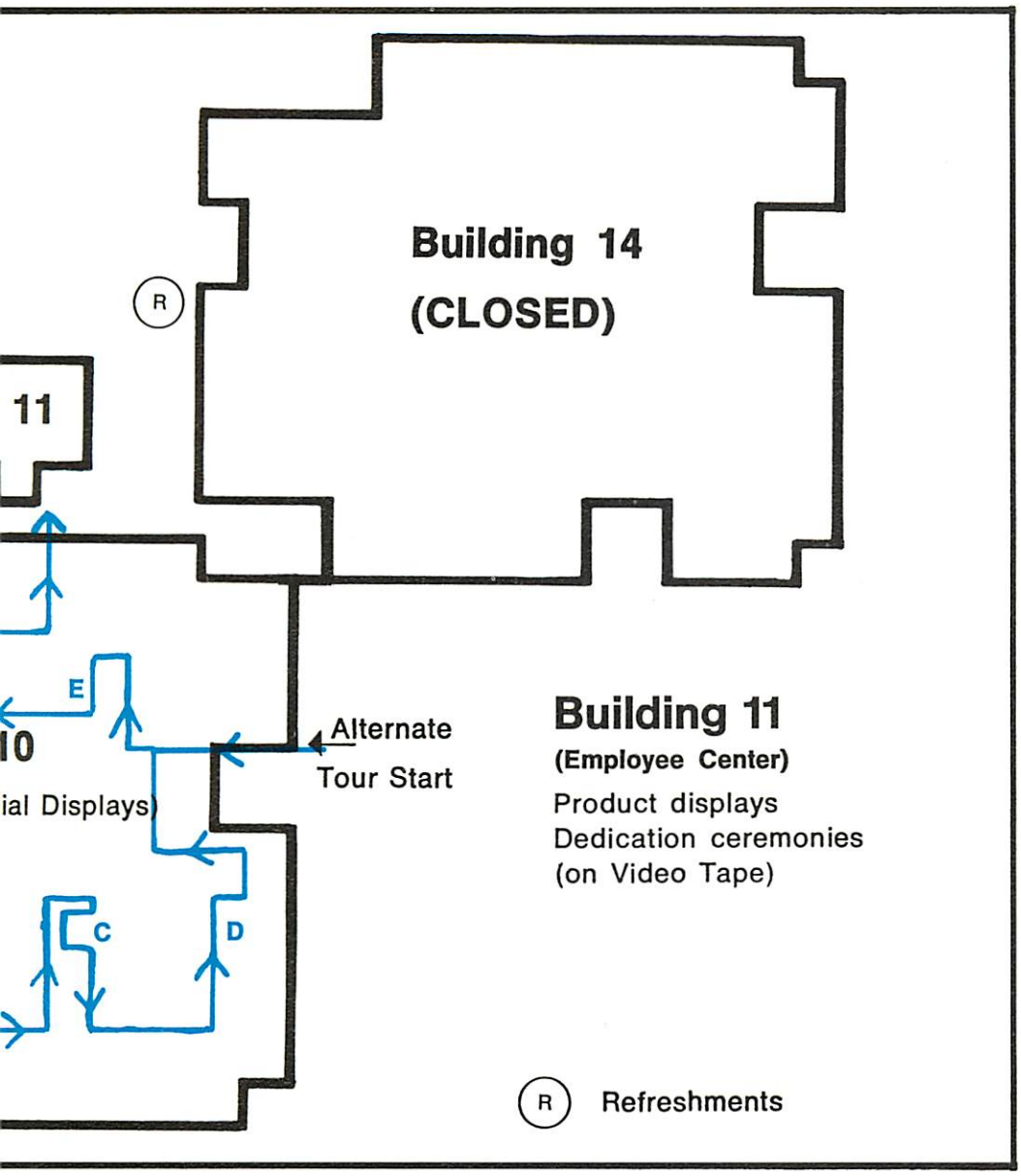
This is the assembly area for major electrical mechanical sub-assemblies for all models of Memorex disc files, terminal controllers, and disc file controllers.

The demonstration here shows a typical wire wrap operation using computerized semi-automatic indexing equipment.

Area C—1600 Film Products Manufacturing

Electrical and Mechanical Assembly and Test of the 1600 COM (Computer Output Microfilm) product line is done in this area.

Open House, May 22, 1971



Among the products in the 1600 series:

1603 Microfilm Printer
Forms Flash Slides
1603 Tester (C.E. Box)
1620 Duplicator
1630 Previewer
1610 Developer
1642 Viewer
1643 Autoviewer
1650 Viewer/Printer

Also on display here is a Fiber Optics Character Generator. This unit is the "heart" of the 1603 Microfilm Printer. It works by transmitting pulsed light through fiber strands to the face of the unit, where it forms a display of alpha numeric characters.

Approximately one mile of optical fiber is consumed fabricating the 4,620 fiber optic strands contained in one character generator.

Area D—1240 Communications System

Assembly and Test of the 1240 Communications System (the Equipment Group's newest product line) is done here. Final test of these units is done over telephone lines connected to a remote computer system.

Areas E and F—Controller and Drive Test

The Memorex controller and disc files (drives) undergo final systems test in this area.

The live demonstrations here include:

- The Memorex 3660 system (which includes one 661 control unit and nine 660-0 disc files) undergoing plug compatibility testing with an IBM 360 mod 30 computer. This system when sold or leased by Memorex replaces an IBM 2314 controller and disc drives. All 3660 systems produced by Memorex are integated and systems-tested with the IBM systems prior to shipment.

- Systems testing of a Memorex 661 control unit and 660-0 drives both 50 Hz (hertz) and 60 Hz using channel simulator which duplicates the IBM 360 mod 30 computer end-user requirements. These systems must run 100% error free prior to being plug compatible tested with the IBM 360 mod 30.

- Automatic computerized acceptance testing of disc files. This operation is performed on all disc files prior to integration of the disc files with the Memorex controller in the systems test area. These tests are programmed to assure that the files run error free prior to the next level of testing.

Building 12 Tour

(Administration Building)

All four floors of the Memorex Administration Building are open. To avoid congestion, please begin your tour by taking one of the elevators from the Main Lobby to the 4th floor.

4th Floor	Executive Offices
3rd Floor	Executive Offices Corporate Marketing Services Corporate Planning and Analysis Internal Auditing Taxes Corporate Accounting Corporate Personnel Administration MEG Marketing
2nd Floor	International Finance International Marketing International Technical Services Financial Public Relations Manpower Planning and Development Consumer Products Corporate Facilities
1st Floor	International Manufacturing International Operations Corporate Facilities Corporate Compensation

Building 14

The Equipment Group's product planning, development, and engineering take place here. Because the work is highly proprietary, this building is closed to visitors.