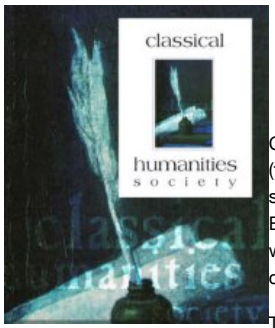
David Romano - Januray 27th, 1991



The Corinth Computer Project, 1988-90: Roman Colonial City Planning

Corinth had been an important Greek city by the 7th century BC because of its location on the isthmus, a cross-roads East-West (from the Saronic Gulf to the Aegean) and North-South (to and from the Peloponnese), and had been distinguished by many firsts, such as the first monumental Doric architecture. In the classical period, too, it had been very important, but after its destruction in 146 BC by Rome (at the same time as the destruction of Carthage), it remained uninhabited for a century, only to be revived in 44 BC when Rome founded a colony there. Its fame then lasted through the 4th century AD, and the city has remained inhabited continuously since its founding. The Project attempts to determine with precision the layout of that Roman city.

The modern canal across the Isthmus (begun by Nero but not finished until modern times) now makes the Peloponnese an island.

The UP Project is not a completely new mapping (indeed work has gone on for over 100 years at Corinth, especially the city center), but it is an attempt to bring everything together with new technology to make a precise map. In Roman times, the size of the city expanded greatly. It is the planning of this 25 square kilometers that the project tries to ascertain, aided by funding from IBM, University of Pennsylvania and many other companies.

The principal equipment used are an Electronic Total Station (with a thoedolite and a built-in computer to determine the coordinates) and Autocad (to plot the lines on the map using the coordinates.) The electronic theodolite/distance meter/computer allows measuring in a 2 mile radius with an accuracy of 2 cm, thus enabling the mappers to link building lines, field lines, wall lines, through the infra-red beam reflected from a target (held on the points for which coordinates are desired.) The computer determines the time for the reflected beam to return and calculates both the distance and the angle. Autocad then plots the lines and labels all with lengths and azimuth readings.

Most of the readings are taken from the top of Acrocorinth, because that gives a view of the whole town from a single point. The survey uses geodetic markers, set up by the Greek government, as spot, reference points for the reflectors since this yields fixed points for which x, y and z coordinates can be integrated into

the overall picture. The computer extends the lines out so the researchers can see what links with what, including villas, tombs, temples and the like. In the field house Autocad's compositing work is augmented by air-photo maps from the 60s, when the city was not quite so built up, to clarify Roman roads and the extent of the Roman city. The computer traces the roads in different colors for different sources of lines (air photo, survey, earlier drawings) to help in sorting out where the different information comes from. Digitized maps can also show contour lines.

Special attention is paid to the (N-S) cardo and the (E-W) decumanus, tho two main cross-roads of a Roman city. The cardo was built in 77 AD, after an earthquake, so the plan we see may have been a secondary, later plan. Corinth's long walls (like those at Athens, for defense of access from city to port) are also being closely studied. The computer provides models to be tested; even if they prove, on examination, to be incorrect, they are still useful working tools and can be redefined easily later.

The city plan seems to come from a survey made in 111 BC, 4 rectangles of land, each 2400 Roman feet by 3500, with centuriation (division of each piece into 100 equal parcels of land), divided off by the two major roads. Here one actus (block of 120 square Roman footage) was probably distributed to each colonist. (One Roman foot at Corinth = .295 meters.) The Roman colony fits almost completely within the earlier Greek city walls, with the agora and forum in the central section. Currently, researchers believe that the 111 BC survey divided the entire block into parcels, but that in 44 BC the center was re-surveyed and more streets put in.

Corinth and Carthage, both destroyed by the Romans in the same year (146 BC), were both re-founded as colonies in the same year (44 BC), with identical areas (3500 x 2400 vs 2800 x 3000).