USE OF AERIAL PHOTOGRAPHY IN URBAN PLANNING*

Joseph T. Bill, Executive Director, Sacramento Redevelopment Agency

The use of aerial photography in city and regional planning is not new. For many years city planning departments have included a mosaic map, usually annotated as a part of their standard equipment and wall decoration. Also the services of photogrammetrists have been utilized to some extent. But many people were unaware of their role.

It is generally true that city planning uses of aerial photography are now far less definitive than those of geologists, archeologists, agricultural economists and certain other professions. This is particularly true with respect to techniques of photographic interpretation.

In 1947 Melvin C. Branch, Jr., published a study entitled "Aerial Photography in Urban Planning and Research" under the auspices of the Harvard City Planning Series. This was an endeavor to acquaint generally the city planner with the potentialities of aerial photography. I do not have any factual information on the effect of this volume on city planning practice, but I suspect that parts of it might be too specialized for untrained city planning personnel to digest, or at least to use effectively as an additional technique which requires additional training.

The purpose of this paper, if complete objectivity were maintained, would be to first acquaint the professionals in the field of photogrammetry with the needs of city planning, and secondly, by calling attention to these needs, invite services, advice and possibly suggestions for equipment and working procedure. This would make the intensive utilization of photographic interpretation techniques a more efficient and direct way to gather certain city planning data.

The new field of urban redevelopment, which is just now getting started in this country, offers the best example among city planning activities for the efficient use of aerial photography, and of a potential consumer of the techniques. Planning the acquisition of large urban areas, usually the oldest and most crowded sections of the city, for purpose of demolition, creating site improvements and sale of cleared land for new construction, requires an extensive and complex job of fact gathering of all kinds. Complete up-to-date, physical information on such items as buildings, site improvements, traffic habits, parking, railroads, bridges, trees, water features, are but a few examples.

It is also necessary to fix completely up-to-date values on all properties. Good stereoscopic aerial photography, in conjunction with Sanborn maps and city engineer's data, should be of real assistance to appraisers called in to set fair acquisition values, as well as to architects and planners who are to create the designs for the new land uses.

The question might here arise as to the quantity of information available in various city offices. I assure you that in the typical city, such information is completely inadequate for the purposes of redevelopment. The condition mentioned is the result of the fact that in older parts of the city it is frequently found that no records of physical improvements exist whatsoever, and that greatly accelerated new construction has taken place during the last ten years, well ahead of map information.

Our redevelopment agency has recently engaged the services of Mr. Vern Cartwright to produce stereo coverage of our Redevelopment Area No. 1 and environs, at a contact scale of 1:2,400 or 1 inch equals 200 feet. It is well to note that this scale is a multiple of 10 and 50 thus enabling us to tie in directly with existing engineering and city planning maps at accepted engineering scales. This has frequently been ignored in flight planning with resultant pain. A stereoscope examination of these contact prints will yield detailed interpretation, in conjunction with ground information, of such items as

* Paper read at Semi-Annual Meeting of the Society, Sacramento, Calif., Oct. 10, 1951.

surface utilities, structural conditions, light and air standards, unknown or illegal land uses, coverage factors, fire hazards, height and form of topographic features, drainage courses, retaining walls, general traffic conditions and many other factors, some of which I have mentioned previously. When augmented by ground information, detailed interpretation gives clues to land uses which are hidden from direct view. Some of these clues fall in the realm of detective work, with the purpose of enforcing city codes or asking for demolition, as the case may be. Most of all, a complete, up-to-date, three-dimensional record, to scale, is available in the office, saving many miles of needless walking and driving for inspection purposes, and providing far more complete and accurate information than any sight-seeing tour. It becomes in effect the only accurate, current inventory of the city's above-surface, physical improvements.

This agency has recently begun this experiment of intensified use of aerial photography in conjunction with fact gathering for redevelopment purposes. A year from now we should be able to report the relative efficiency and accuracy of this attack on the problem. Suffice it to say, we now have high hopes.

I will call attention to another use for aerial photography in city planning which may be explored for more extensive use. This is in the much needed area of public information. Enlargements of vertical pictures of good contact scale, such as one inch equals 200 feet, are not only usable as a pictorial map but make dramatic presentation material for public exhibits. We will explore the use of mounted stereograms with small stereoscopes set in place at a later date. Vectographs and three-dimensional projection with polarized light would make forceful and exciting public presentation, especially if it were possible to bring the cost sufficiently below that of making models.

In conclusion, I submit that modest photogrammetric equipment, such as scales, stereoscopes and simple plotting devices, might well be utilized by city planning personnel, especially if instruction in their use were available. Beyond this, the way is open for any imaginative photogrammetrists to suggest techniques and devices to assist the city planner in becoming an interpreter. It is doubtful if the city planning consumption of aerial photography will extend much beyond the purchase of a mosaic until these techniques are more generally known.

STUDENT MEMBERSHIP

The application form may be obtained through writing to the Society's Secretary. Several professors and instructors also have a supply.

A considerable number of those who became Student Members in 1952 are no longer undergraduate, or graduate students attending a university or school recognized by the Society and having at least one faculty member who is a Member of the Society. These Student Members are in good standing until December 31, 1952. They also are eligible for transfer to the grade of Corporate Member if they are still engaged in or interested in photogrammetry. They are urged to apply for such transfer at an early date. With the request should be sent the dues payment for 1953, as a Corporate Member.