

# URBAN ARBORICULTURE TRAINING

by Paul Dean Coker and Martin Gregory Kushler

**Abstract.** This paper presents the results of an innovative employment training program for urban arborists. A total of fifty-one unemployed or low-income persons in southwestern Michigan were trained in urban forestry related skills. The authors describe the rationale for the program and for the role urban arboriculture plays in improving and maintaining the quality of the urban environment. The highly positive results, in terms of educational gain, job placement and community benefit, are also detailed.

The existence of an adequate plant environment is fundamental to the establishment and maintenance of vitality in the urban setting. Like most maintenance functions, it is central to the realization of broader goals, in this case the health and well-being, both mental and physical, of the city dweller. Urban Arboriculture, as an element of Urban Forestry, can play a key role in the pursuit of a quality urban environment. It is the intent of this paper to describe the results of an innovative approach to the improvement of the urban environment through a unique employment training program in urban arboriculture.

In 1977, the need for urban arboriculture in local communities of southwest Michigan was contemplated by three arbor-oriented professionals; Dean Coker, a Landscape Architect; Dale Getz, a Forester; and Kathy Gervasi, a Horticulturist. They asserted that many midwestern communities, unlike some of their eastern or western counterparts, have been slow to recognize the need for the development of a carefully planned verdant environment. They noted, however, what appeared to be a growing apprehension by citizens and city officials alike who had come to realize that urban blight already has and will continue to affect their cities. The three professionals felt that this first step of recognition was an opportunity for improvement. In the fall of 1977 they submitted a proposal to operate an urban arboriculture career training school to the local agency of the U.S. Department of Labor's Comprehensive Employment and Training program (C.E.T.A.). This agency, funded by the C.E.T.A. Act of 1973, accepted the proposal

and the Brandywine School of Urban Forest Technology was established.

## Rationale

The Brandywine School of Urban Forest Technology was designed to perform two primary functions. First, it was to train qualified arborists under C.E.T.A. mandate (which required the student body to be recruited from the most "significant segment" of people needing training in the local area). Second, its existence was intended to create a pool of conscientious arborists, who, by virtue of their training, would pragmatically affect the quality of local urban forest conditions. This would occur as the graduates acquired jobs in both government and industry and performed their skills with a heightened sense of the need for an improved urban environment.

## Program Description

As mentioned, the school operations were designed to fill both C.E.T.A. funding requirements and to provide a greater level of environmental awareness within the student. To accomplish both goals, a carefully planned system of self-paced, multi-media education was designed and implemented. Throughout the program, emphasis was placed on creating a situation in which students and instructors would work together to form an educational experience of lasting environmental influence.

The instructional program began with the administration of a pre-test designed to measure arborist-related knowledge and skills at point of entry and a Likert-type attitude questionnaire developed to gather information pertinent to educational and occupational attitudes. This type of questionnaire makes a statement and then offers the respondent a range of answers from strongly disagree to strongly agree. Each student was then given a list of required Learning Tasks which included all of the various activities to be encountered in the two month training period. The Learning Tasks included all the necessary

academic topics pertinent to urban arboriculture, which were to be presented in various media activities. Lectures, slide-tapes, readings, research, laboratory activities, discussions, tests and quizzes, were part of each Learning Task category. In addition, students participated in "hands on" learning through group projects conducted at various sites in the community.

The student could complete the various tasks at their own pace and, thus, complete the program in as little as two months or as much as four to six months. Furthermore, a low student teacher ratio (generally 5:1) assisted greatly in facilitating individual attention. Weekly counseling sessions were held to enable the instructors to keep a watchful eye on both comprehension and pace.

Upon completion of the various Learning Tasks, the student would be eligible for the schools certificate of completion and would then retake the two testing measures which were administered at the beginning of the training. Their pre- and post-scores could then be compared. The students were able to review the scores and the instructors could use the information to design better instructional methods. The training effort also included special instruction on the skills of job finding. Each student prepared a personal resume and practiced interview and communication skills.

### **Program Participants**

C.E.T.A. entry requirements prioritized the selection of students making economic and socio-ethnic status primary criteria. Therefore, the composition of students was unusually varied and demographically diverse. "Significant segments" of the community which became the target population included: unemployed black adults; female heads of households; economically disadvantaged; welfare recipients; veterans, youths 14-21; handicapped; and those unemployed for 15 weeks.

Over the 14 months of the project, ending in January 1979, the Brandywine School of Urban Forest Technology accepted and trained a total of 51 students. Of these, 37 were male and 14 were female. In terms of race, 8 were Black, 35 Caucasian; and 8 were American Indian. Of these students, many fit various other C.E.T.A. priority

categories. The ages of the students ranged from 18 to 45. The educational levels were as follows: 9 high school dropouts; 10 GED recipients (two attained while in the program); 20 high school graduates; and 12 with some college training (usually classes taken at the local community college). Only 1 person had completed a four year college and this was in religion. In summary, it can be seen that the students who entered the program comprised a very diverse group in terms of demographic characteristics and were very representative of the priority targets for a C.E.T.A. Title I training program.

### **Costs**

The school commenced December 1977 and continued with three additional successful appropriations through January 1979. During this period of time, a total of 51 students were trained, at an approximate cost of \$100,000 dollars. In addition to operating expenses, this figure includes a subsistence level incentive stipend for each of the student participants. Although these costs were already quite low, it is further worthy of note that the students, as part of their training program, performed a variety of arborist projects on various city properties. The value of these donated services was estimated to be approximately \$20,000.

### **Program Results**

The Brandywine School of Urban Forest Technology completed its program at the end of January 1979. The employment goals of the school were met both to the satisfaction of the instructors/coordinators and the funding source. In terms of placements (and the students' contribution to the arboreal environment), four different towns and villages hired a total of six students to develop and supervise urban arboriculture programs for their municipalities; two students began operating their own businesses, which still exist today; four students were hired by national arboriculture firms and placed in Washington, D.C. and Dallas, Texas; two other students are continuing their education; and many more fill the ranks of local arboriculture businesses. In addition, during July 1979, the National Association of Counties

presented the school an award as a unique, innovative program and published an abstract of the program in their nationally distributed handbook. These pleasing examples of success, however, are additionally reinforced by findings of a major effort of program evaluation carried out in this program.

The effectiveness of the Brandywine School of Urban Forest Technology was examined using three different indicators. First, and of prime importance, was the placement results. Overall, of the 51 program trainees, 21 found employment in a training related position. Another five found suitable jobs, although not directly related to urban forestry. Ten more students found forestry related jobs in other C.E.T.A. funded projects. Of the remaining students, nine received a positive termination for completing the course and received the school certification in a career area, while only six students left the program as negative terminations (three being early dropouts who remained in the program for six days or less). Hence, of those who received any kind of extensive training from the program, the results were excellent.

In addition to placement results, two further indicators of program impact were measured. These included an attitude measure and a tree-related knowledge test given to participants at admission and again when they left the program. Attitudes toward work and education-related topics were measured by means of a 16 item Likert-type questionnaire developed by the project evaluator. To briefly summarize, overall work and education related attitudes improved significantly ( $p=.01$ ) from pre- to post-, with particular gains in items

relating to confidence in the ability to acquire a steady job.

The knowledge test utilized for this evaluation was a 110 item test designed by the program evaluator, to measure a variety of facets of urban arboriculture knowledge, such as; plant identification, tree maintenance, and landscaping. The results on this measure were also very impressive. From pre- to post-test, scores on this measure improved from an average score of 45.6 correct to 86 correct. This improvement is statistically significant ( $p=.001$ ) and corresponds with the results from an item on the attitude measure, in which the students rated themselves as significantly higher at the post-test in terms of knowledge about trees and plants ( $p=.001$ ).

### **Summary**

Finally, the findings of this study present one more area deserving mention. The positive placement results of this program indicate that there is indeed an existing demand for persons trained in urban arboriculture. If this fairly typical midwestern community is in fact representative of the nation as a whole, then the future looks bright for urban arboriculture and the contribution it can make by enhancing our urban environment.

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