

Longwood Program

**LAND-USE LAWS AND THE LANDSCAPE:
A PROPOSAL FOR PUBLIC HORTICULTURE INVOLVEMENT**

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ABSTRACT

Landscape design standards appear regularly in community land-use regulations. Problems are often inherent in these regulations and in the landscapes they produce. This study identifies some of these problems, and the issues that they raise, proposing a role for public horticulture professionals in helping communities to address them.

The procedure for investigation involved case studies of three southeastern Pennsylvania communities. Local land-use regulations, legal framework and processes, were examined as well as non-residential landscapes resulting from the regulatory language.

The case studies revealed a number of problems with the landscape regulations. Objectives for landscape specifications were found to be frequently invalid or unclear, regulatory language often failed to address objectives when they were stated, design standards were overly restrictive at times, plant lists often contained questionable recommendations, and horticultural expertise was not evident in most cases.

Each of the problem areas raised its own subset of issues that warrant careful consideration by each community, and action by public horticulture

organizations. Programming ideas are offered; background information is based on the experience of organizations currently active in land-use policy activities on a local level.

Assistance is needed in addressing the problems of landscape regulation, and public horticulture organizations have much to contribute toward the attainment of workable solutions.

"It is difficult to lay down rules for planting. Time, neglect, and accident will often produce unexpected beauties."

-Humphry Repton (1752-1818)

INTRODUCTION

Communities throughout the United States include landscape design standards in their land-use laws. This aspect of land-use control is introduced locally for a variety of reasons and produces regulatory language that yields a variety of results when translated into landscape. With its potential possibilities and problems, landscape regulation presents a profound challenge to the many organizations, professionals, and citizens concerned with public policy and the community landscape. With few exceptions, this subject and its attendant issues has gone largely unnoticed by public horticulture professionals and organizations . . . one group whose body of technical knowledge is clearly needed in this area.

The purpose of this thesis is to 1.) illustrate, through case study, the issues, choices, and problems that commonly arise in the regulation of built landscapes by municipal land-use laws; 2.) demonstrate the need for technical assistance in the horticultural aspects of landscape regulation; 3.) propose that a leadership and collaborative role in this area can and should be assumed by the public horticulture community; introduce basic information on the processes of land-use planning that would be useful to interested public horticulture professionals.

CHAPTER I:
LAND USE PLANNING: BASIC PREMISES, TERMS, AND TOOLS

It is important to understand some of the issues of landscape regulation before attempting to confront them. Appreciation for the processes - even the traditions - through which such regulations have originated and continue to evolve is essential. Such an understanding is crucial to the collaborative professional relationships that this thesis recommends.

The purpose of this chapter is to provide the reader with basic background information about land-use planning at the municipal level. As processes and terms vary widely from state to state, practicality dictates that this coverage focus on one state only. Therefore, this chapter looks at local planning and regulatory structures in the State of Pennsylvania, location of the case study communities reported on in Chapters II and III. Important variations in other states will be included where appropriate. Readers who wish to learn more about the processes of land use planning in Pennsylvania or elsewhere are encouraged to consult the appendices, notes, and bibliography for additional information. Regulatory terms used in this section and in the case studies, with which readers may not be familiar, are explained in the glossary that appears in Appendix F.

Some History

The practice of planning and guiding land use has a varied and colorful history. Decisions related to physical layout and quality of life have been made by communities throughout time. The determination of agricultural land uses, the proportion of a society's resources devoted to common facilities, the location of parks and thoroughfares, and how the public's health and safety can best be protected are issues that continue to be central to land use planning and regulation.

Land use planning is certainly not a new idea; the planning and regulatory efforts in Colonial America indicate that the ideas came with the Colonists. In 1641, for instance, the city council of New Amsterdam decreed that, "the poisonous and stinking weeds *before everyones door* be forthwith plucked up, upon the forfeiture of of three shillings for the neglect thereof."¹ Ten years later, when New Amsterdam had nearly 1,000 inhabitants, the city fathers issued an ordinance for removing haystacks, henhouses, and pig pens in order to dignify the streets.² By 1682, the City of Philadelphia had established a grid pattern of streets and parks to be followed for the years to come. That layout of streets and small parks endures to this day. Quaint as they may seem, these early ordinances were earnest attempts to improve the general quality of life.

Today, land-use or community planning is defined as a social and governmental process wherein the physical organization and content of communities are evaluated, designed, and regulated. Planning, however, is

much more than the design and location of streets, parks, residences, businesses, utilities, and public buildings. It involves less obvious but critical decisions related to the social and economic well-being of community.

The Importance of Land-Use Planning

Land-use planning decisions and regulations profoundly affect the quality of life in a given area. They influence physical, social, and economic aspects of a community in ways that are not always apparent to the non-planner. The range of issues handled by land-use planners include the capacity of sanitary facilities, minimum lot sizes for residential and commercial properties, and whether construction should be permitted on steep hillsides or floodplains. Decisions on these and other issues, in turn, influence almost every aspect of community life. They may also affect the social makeup of a community, as lot size restrictions, for instance, have been shown to influence the affordability of housing.³ The regulations also have a bearing on public safety; one example is the decision to permit or restrict the construction of homes or businesses on land that may be unsuitable for such uses. The effects of land use planning decisions are often irreversible.

Local land-use laws, particularly zoning and subdivision codes, exert tremendous influence on the appearance of the community, the manner in which space is used, and the way in which the built environment functions. Built areas, landscapes included, are to a large extent three-dimensional representations of these laws.

*Longwood Program*Enabling Laws: The Power to Plan

Authorization to plan and regulate land use is provided by a state in the form of enabling laws. In Pennsylvania, the Municipalities Planning Code, Act 247, was passed in 1968 to govern the scope and procedures of planning, zoning, and land development in all municipalities (townships, boroughs, cities) except Philadelphia and Pittsburgh.⁴

This is not to suggest that land use planning and regulation occurs only at the municipal level. States such as Maryland and Delaware, for example, confer primary power to regulate land use on counties rather than municipalities. Other states have adopted statewide programs for handling the broader, more regional problems of land use. The states of Vermont, Maine, and Hawaii have developed statewide comprehensive land use programs, while special statewide regulations protecting coastal zones and wetlands have been attempted in California, Florida, and Wisconsin.⁵

Additionally, multi-state planning efforts have been undertaken in several areas of the country, mostly where metropolitan areas overlap political boundaries. Organizations are established to promote methods of cooperation in addressing problems or facing issues that are broader than the interests of the individual local governments. Issues such as water supply, regional transportation, and regional development patterns are addressed here. The Tri-State Regional Planning Commission (New York, New Jersey, and Connecticut) and the Delaware Valley Regional Planning Commission (New Jersey and

Pennsylvania) are examples. These commissions generally function in an advisory capacity.

It is important to understand the nature of the authority conferred by Pennsylvania's Municipalities Planning Code (MPC). Because land-use regulations (particularly zoning ordinances) often constitute strictures on private property rights without compensation to property owners, they must comply with the constitutional limitations on police powers.⁶ Therefore the MPC states that regulations must be reasonably related to promoting the public health, safety, and welfare and that they do not effectively confiscate property without compensation.⁷

One might wonder what this has to do with the municipal regulation of landscape plantings. The MPC statements on health, safety, and welfare, as well as illegal taking of property, represent basic rights guaranteed by the United States Constitution. The validity of regulations adopted by municipalities rests heavily on the recognition of these rights. What can be regulated, and to what extent, is subject to interpretation in the courts based upon health, safety, and welfare. The regulation of landscape plantings, and related aesthetic issues, is also subject to health, safety, and welfare considerations. The case studies will reveal the meaning that this has in practice.

Municipal Framework

Within the MPC, the functions of land use control are allocated to four separate bodies or individuals in the municipality:

Governing Body

The governing body is the council in cities, boroughs, or incorporated towns; the board of commissioners in townships of the first class; and the board of supervisors in townships of the second class. It is comprised of the elected officials of the municipality who adopt laws (including land use regulations) and control finances. In issues related to land use, the governing body conducts hearings on all proposed adoptions and amendments to the regulations. Additionally, the governing body hears and decides on proposals for conditional uses of land⁸ as well as challenges to the regulations.

Planning Agency

Planning agencies are authorized by the MPC to consist of lay planning commissions in most communities; larger cities often have professional planning staffs. The municipal planning commission may consist of three to nine members. It is responsible for drafting the comprehensive plan, zoning ordinances, and subdivision and land development ordinances. The planning commission may also prepare a building code, a housing code, environmental study, or capital improvements program. Mainly, the planning commission screens and recommends approval or denial of ordinance amendments, subdivision and land development plans, and planned residential development

(PRD) plans. The planning commission's role is advisory. Planning commissioners are unpaid, but reimbursed for expenses incurred in the fulfillment of their municipal duties.

Zoning Hearing Board

The zoning hearing board, consisting of three to nine members, hears appeals to decisions made by the zoning officer as well as applications for variances and special exceptions. The landowner wishing to challenge the validity of a provision of the zoning ordinance or map brings that challenge before the zoning hearing board.⁹ Members of the zoning hearing board are also unpaid, but reimbursed for expenses incurred while performing official duties.

Zoning Officer

The zoning officer, a paid employee of the municipality, administers the zoning ordinance in accordance with its literal terms, makes inspections, and institutes appropriate enforcement actions on behalf of the municipality to gain compliance with its land-use ordinances. The zoning officer has no discretionary power; one who disagrees with a decision of the zoning officer must appeal to the zoning hearing board.¹⁰

Municipal Regulations

The primary municipal regulations for land use, as authorized by the MPC, consist of the zoning ordinance and map, and the subdivision and land development ordinance. They may also include regulations for planned residential development, and mobile home parks. The MPC recommends that development of these regulations be guided by the comprehensive plan as adopted by the governing body.

Comprehensive Plan

This document represents an analysis of the community's resources and constraints. Professionally accepted methods of comprehensive planning involve the collection and evaluation of data relating to many dimensions of community life. Usually included in such a study: demographic information giving census figures and future projections; factors such as water supply, topography, drainage, woodlands, farms, floodplains, and ecologically sensitive or unique sites; present and future economic activities and their potential for attracting additional growth. Social factors such as numbers of school-age children, low income families, or elderly people, as well as political forces such as special interests (environmental groups, builders, farmers, merchants) mobilized to influence land use decisions, are also considered.

The insights derived from these and other analyses help to guide recommendations for the future growth and development of the community.

The MPC requires that comprehensive plans include 1.) statements of objectives; 2.) plans for land use; 3.) plans for movement of people and goods; 4.) plans for community facilities and utilities; 5.) maps or statements indicating the relationship of the municipality and its proposed development to adjacent municipalities.

Zoning Ordinance

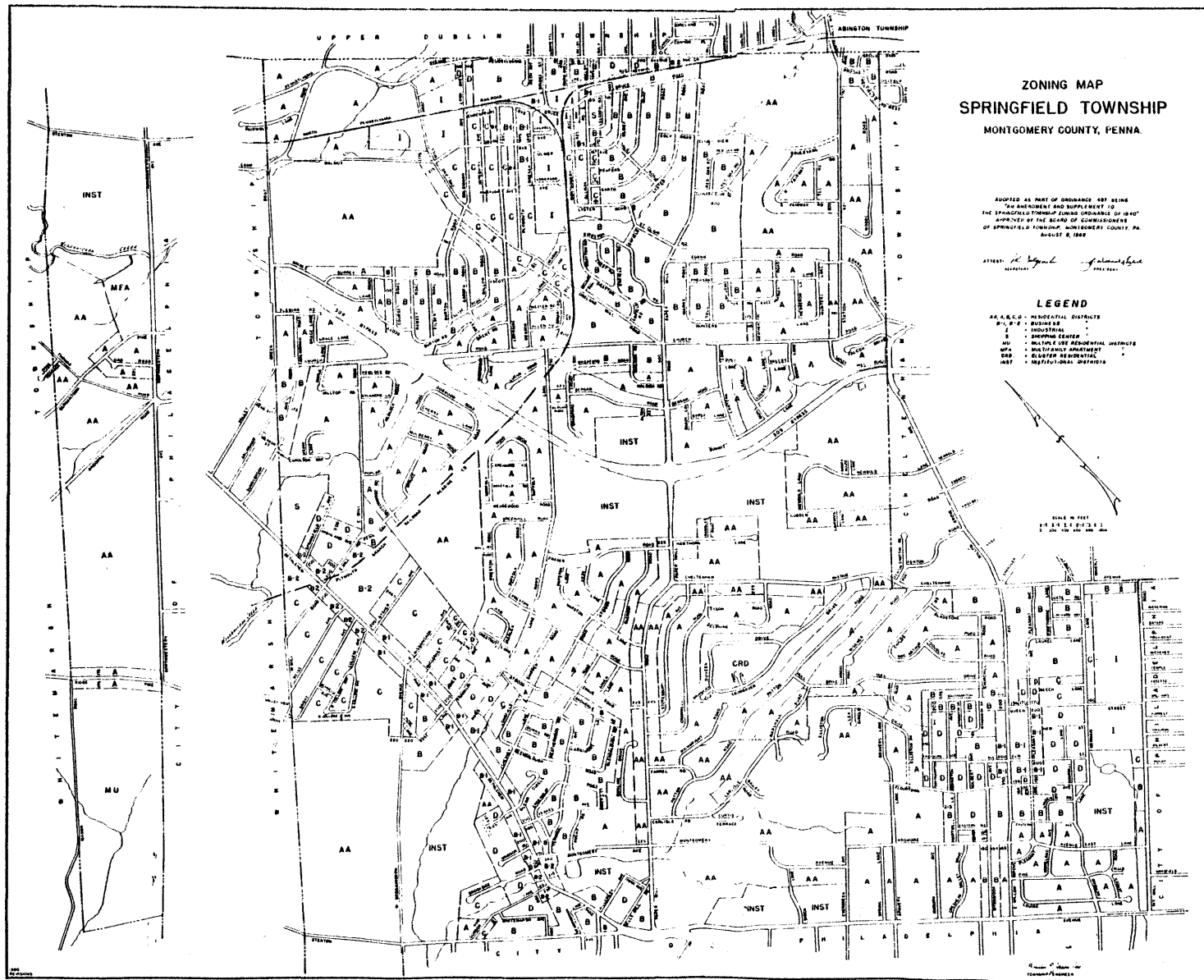
The zoning ordinance should reflect the objectives of the comprehensive plan, although this is not enforced. Zoning ordinances may permit, prohibit, restrict, or determine:

1. uses of land, bodies of water, watercourses.
2. the size, height, bulk, location, construction, maintenance, alteration, razing, and removal of structures.
3. areas and dimensions of land and bodies of water to be occupied by uses and structures, as well as areas, courts, yards, and other open spaces and distances to be left unoccupied by uses and structures.
4. density of population and intensity of use.¹¹

Elements authorized by the MPC for these purposes include 1.) provisions for special exceptions and variances; 2.) provisions for conditional use; 3.) provisions for administration and enforcement; 4.) provisions for the protection and preservation of natural resources and agricultural lands.

Figure 1.1 Zoning Map

Zoning maps, such as the one shown on page 11, are important planning tools in most communities.



The practice of districting a community according to land use was developed to protect public health and welfare by preventing the misuse and overcrowding of land. Additionally it was intended to protect individuals from the adverse effects of neighboring incompatible land uses. Though the concept of zoning, and its practice, has been the subject of much criticism and controversy during its relatively brief history¹², it remains a major planning tool for local governments¹³.

Official zoning maps show the various zoning districts, and acceptable land uses for those districts, according to the municipal zoning authority.

Subdivision and Land Development Ordinance

The municipal subdivision and land development ordinance (S/LDO) is authorized by the MPC to aid in guiding development and managing the pressures on infrastructure that subdivision and development usually bring. The S/LDO can be an important tool in the protection of natural features and systems. The enabling legislation permits, for example, provisions for street design, protection from flooding, wastewater treatment, stormwater management, and designated open space.¹⁴ Design standards for landscape plantings usually appear in the S/LDO.

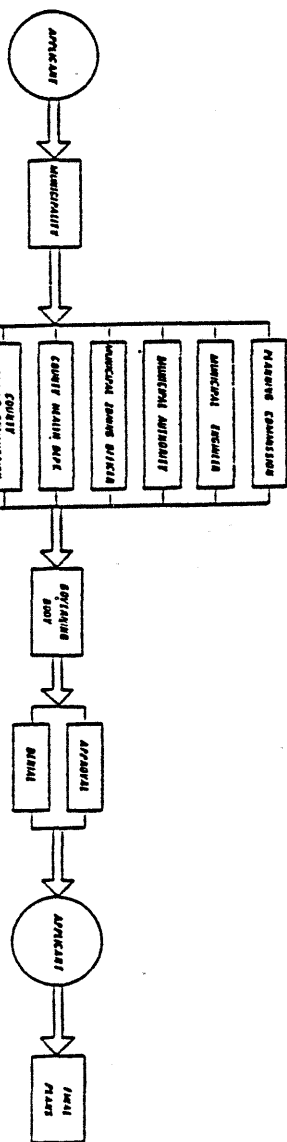
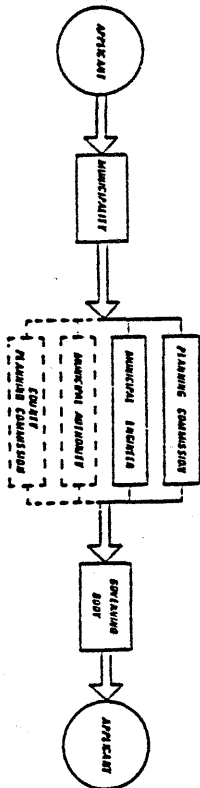
Figure 1.2 Subdivision Review Process, p. 13

The subdivision review process involves several steps and includes review of plans for the landscape.

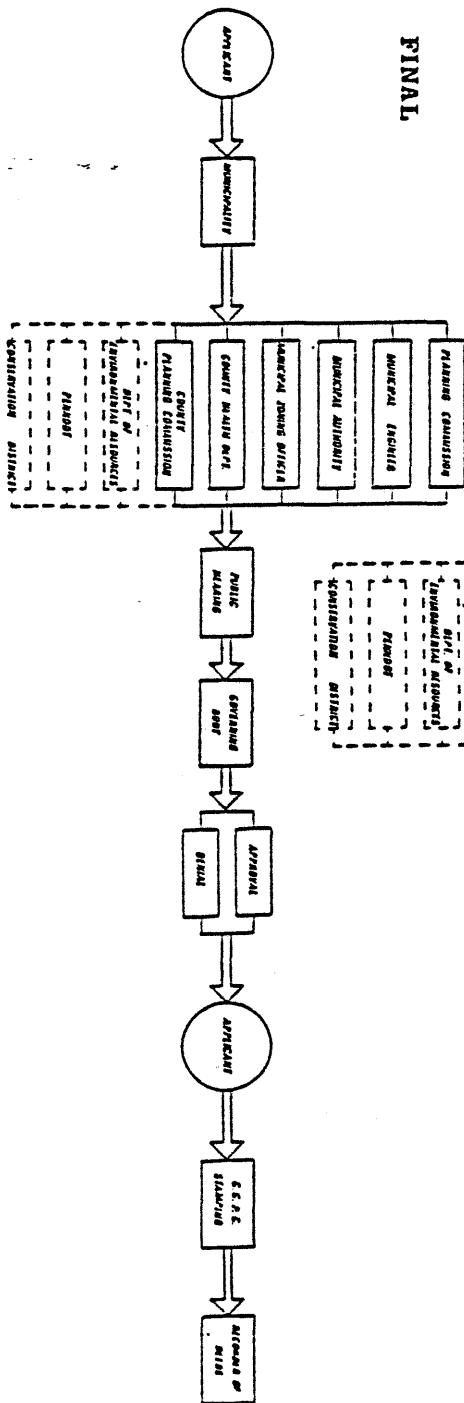
SKETCH

SUBDIVISION REVIEW PROCESS

PRELIMINARY



FINAL



Zoning Innovations

The typical zoning ordinance provides for the delineation of zoning districts in which regulations relating to land use, lot size, bulk of buildings, and density are applied uniformly throughout the district. Experience with conventional ordinances indicates that they may be unduly restrictive and may prevent the achievement of important community objectives.¹⁵ Economic growth and increased intensity of land uses have inspired a search for solutions that accommodate needs for greater flexibility and provide expanded options for meeting objectives. A number of innovations have been proposed and tested in response to this concern. Selected examples are explained in the following sections.

Performance Zoning

Performance zoning is a technique prescribing standards that must be met for a specified land use to be permitted. Theoretically, any use would be permitted in most zones if the proposed use met performance standards relating to noise, smell, smoke, glare, etc. The same concept is used to limit higher density residential use to configurations that meet performance standards for impervious cover and open space ratios, proximity to utilities, and adequacy of community facilities for serving the new residents.

An important concern of performance zoning is the quality of design. While conventional zoning usually forces an approach that ignores the physiographic features of the land, performance zoning provides several

acceptable design alternatives and encourages sensitivity to the land and its characteristics. An important consideration in performance zoning is to provide designers with enough flexibility to use their skills. Rather than isolating different land uses from one another, performance zoning produces a locally-developed matrix that determines the level of buffering (consisting of land form, distance, and type and intensity of vegetation) appropriate for one use against another. Additionally, this often serves as an economic incentive for high intensity land uses to locate near other high intensity land uses. Performance zoning is a relatively new approach that attempts to make the local land use regulation process more environmentally sensitive.

This is not to suggest that performance zoning holds all the answers. Even its most enthusiastic advocates admit that a system theoretically permitting widely disparate uses to exist side-by-side is slow to gain grass-roots acceptance. Subsequently, a number of communities have adopted certain fragments of performance zoning, and adapted them to their own needs. Radnor Township, one subject of the case studies presented in Chapter III, is an example of this.

Cluster Zoning

Cluster zoning is often an option of performance zoning. It permits the reduction of minimum lot sizes for assurances from the developer that the amount of land reduced from each lot will be aggregated as open space. Cluster zoning provisions result in lower the per-lot cost for streets and utilities. It can also preserve open space by concentrating buildings away from

areas on the site with important or sensitive natural features such as woodland, wetland, hilltops, or steep slopes.

Planned Residential Development

Planned residential development in Pennsylvania is a combination of cluster zoning and mixed use development. Planned residential development is a method of development in which an area is developed as a single unit containing, for example, residential clusters and commercial or service establishments for the primary benefit of the residential development.

Incentive Zoning

Incentive or bonus zoning is the term used for any type of zoning provision that offers an affirmative inducement to private developers, encouraging them to develop land in a manner that furthers specific public objectives. For example, a developer may be permitted to increase the number of housing units per acre in exchange for an agreement to build some proportion of the total number of units for low-income families.

Special District Zoning

Special district or overlay zoning creates districts to restrict, protect, or promote a particular purpose. Historic or cultural neighborhoods, as well as floodplains or slopes, can be protected by special district zoning and its provisions.

Transfer of Development Rights

Transfer of development rights is the term that describes a group of instruments used to preserve farmland, open space, or sites of historic or ecological significance. Transfer of development rights creates a system in which owners of property to be preserved would sell their development rights to owners of land in designated districts where those rights may be used to increase the authorized limits of density.

Land-Use Law and Vegetation

A major assumption of this thesis is that vegetation is an element in the community that should be considered in the processes of land use planning and regulation. This assumption has been argued for and supported many times over by practitioners and authors such as Ian McHarg, John O. Simonds, Nan Fairbrother, and Lewis Mumford. The author acknowledges the assumption and offers a brief review of favorite arguments, but prefers to build upon such arguments rather than to attempt reproducing them here in their entirety.

Ian McHarg, in *Design With Nature*, suggests that when design of the environment is achieved with sensitivity to physiographic features of the land, designs not only make more sense, but they result in healthier places for people. His is an argument that appeals to reason and to the health, safety, and welfare statements of enabling statutes. Coughlin and Strong, in their study, *Forests, Fields, and Urban Development: Planning as Though Vegetation Really Mattered*, present a technical, data-oriented argument in which they conclude, "We

believe we have demonstrated that vegetation benefits are of sufficient magnitude to warrant inclusion in urban land use planning."¹⁶ Charles Little, on the other hand, presents an existential argument in which he claims no need for the technical or rational tools of the others. He states,

Perhaps we cannot justify a humane landscape on the basis of human perception. Perhaps we can, but few have had the nerve to try. Most of us have been embarrassed to voice a flat footed celebration of place, without the diversionary tactic of ringing in a brass band of ecological, sociological, or economic scientism.¹⁷

Clearly, the most common arguments for vegetation, especially in the public arena where vegetation of any kind is still regarded largely as amenity¹⁸, include appeals that stress the economic value of greenery while pointing to the social and ecological benefits in addition. While all of these arguments have merit, an important reality stands out: for whatever reasons, a growing number of communities require and regulate landscape plantings in their land-use laws. Moreover, many of the new approaches to land-use regulation, such as performance zoning, rely heavily on the sensitive use of vegetation. For those reasons alone, vegetation as a community element deserves the same thoughtful attention expected for other elements of the community fabric.

Tools for Handling Vegetation

Vegetation is handled by municipal regulations in a variety of ways. Probably the most time-honored and common vehicle has been the weed ordinance. Originally used in agricultural areas to enforce eradication of noxious species, the weed ordinance has also found a home in suburbia where it is used to encourage certain landscape aesthetics, to the exclusion of others.

Public parks, natural areas, or areas of scenic value can often be protected by local government through the use of special district zoning. Land can also be held or managed by an independent agency, such as a conservancy, sometimes through the use of instruments such as conservation easements or deed restrictions.

Additionally, some communities have adopted natural features ordinances that require developers to protect specified natural features on a site. Those features might include land forms, existing trees, or vistas. The case studies provide examples of this.

Finally, increasing numbers of communities specify design standards for built landscapes in their subdivision/land development regulations. These standards apply largely to non-residential properties¹⁹, although multi-family housing is often subject to similar standards.

Local regulations may encourage, permit, or deny the sensitive treatment of built or indigenous landscapes. Few regulations, or communities that commission those regulations, have yet to give full and thoughtful attention to this issue. It is important to reiterate that the local regulations often determine how the landscape will look and how it will perform.

Vegetation, admittedly, is one of myriad factors to be considered in the land-use planning process. It often becomes a low priority item in the face of building code violations or other immediately pressing or threatening events. The following case studies are intended to illustrate and analyze some of the issues, problems, and dilemmas related to landscape regulation on the local level.

CHAPTER I NOTES

¹ Bernard Rudofsky, *Streets for People: A Primer for Americans* (New York: Van Nostrand Reinhold Company, 1982), p. 43.

² Rudofsky, p. 45.

³ See *Southern Burlington County NAACP v. Township of Mount Laurel*, Supreme Court of New Jersey, 1975.

⁴ *Pennsylvania Municipalities Planning Code*, 7th Ed., Act 247 of 1968, as amended (Harrisburg, PA: State of Pennsylvania, Department of Community Affairs, Bureau of Community Planning, Planning Services Division, 1983), p. 1.

⁵ R.G. Healy and J.S. Rosenberg, *Land Use and the States*, 2nd Ed (Baltimore: Johns Hopkins University Press, 1979).

⁶ Section 1 of the 14th Amendment to the United States Constitution states, "no state shall . . . deprive any person of life, liberty, or property without due process of law."

⁷ *Municipalities Planning Code*, p. 2.

⁸ Permitted or denied based on express standards and criteria.

⁹ As an alternative to submission of a curative amendment challenge to the governing body.

¹⁰ *Municipalities Planning Code*, p. 20.

¹¹ *Municipalities Planning Code*, p. 17.

¹² The first comprehensive zoning ordinance in the United States was adopted in New York City in 1916.

¹³ Lane Kendig, *et al*, *Performance Zoning* (Washington, DC: American Planning Association, 1980), p. 5.

¹⁴ *Municipalities Planning Code*, p. 11.

¹⁵ Kendig, p. 5.

¹⁶ Robert E. Coughlin and Ann L. Strong, *Forests, Fields, and Urban Development: Planning As Though Vegetation Really Mattered* (Philadelphia: University of Pennsylvania, 1982), p. ix.

¹⁷ Charles E. Little, "Preservation Policy and Personal Perception: A 200-Million-Acre Misunderstanding," *Landscape Assessment: Values, Perceptions, and Resources* (Stroudsburg, PA: Dowden, Hutchinson, and Ross, Inc., 1975), p. 57.

¹⁸ Michael J. Meshenberg, *The Language of Zoning* (Chicago: American Society of Planning Officials, 1976), p.4.

¹⁹ The constitutional guarantee against extreme use of police powers discourages the requirement of landscape plantings for most private residences; the expense of upkeep may be considered to be a form of "illegal taking."

CHAPTER II

CASE STUDY RATIONALE AND METHODS

These case studies closely examine the landscape specifications currently effective in the regulations of three selected communities. The specifications are studied in terms of their stated purposes, the landscapes which result from them, and their day-to-day administration. It is intended that the detail of these studies be built upon the general information acquired by the reader in Chapter I.

The introduction of this paper suggests that there are difficulties inherent in the regulation of built landscapes by local law. This study is inspired by those perceived problems and the challenges that they present to a number of professions. For the purposes of these case studies, a series of questions - reflecting those apparent problems and issues - has been developed:

1. Are communities clear on what should be achieved through the landscape regulations that are adopted? There appears to be some uncertainty here. Goals and objectives should be important for landscape design standards. Developers required to install plantings should at least have the benefit of knowing the reasons for the requirements. Perhaps such information might provide some direction for those willing to look for it. Moreover, the

effectiveness of the regulations, if that is a concern, cannot be evaluated without stated objectives.

2. Does compliance with these regulations fulfill those objectives? It also appears that it might be possible for a site to be in full compliance with the regulations and still do little toward fulfilling the objectives.

3. Do communities seek horticultural expertise when drafting landscape regulations? It seems that little of this occurs.

4. Are landscape regulations too restrictive, i.e do they stifle good design in attempting to discourage poor design? This is a concern that has been expressed repeatedly. Lane Kendig states that "the principal objection to design standards is that they rarely permit more than a single design solution and thus impose monotony."¹ He also suggests that traditional zoning approaches give local officials only an illusion of control in that they may permit or veto land uses. He maintains, however, that there is little or no control over the environment that is ultimately created on a site.²

Gary Robinette, in his book, *Parking Lot Landscape Design*, echoes these concerns:

At best, an ordinance will regulate the minimum landscape development required in a parking lot . . . it will not insure the best possible planting, grading, protection, or circulation.³

John Thomas, a Bucks County (PA) landscape architect, has approached this issue from more than one angle. Formerly a staff member of the Bucks County Planning Commission, Mr. Thomas has authored, and

contributed to, his share of regulatory language. Now a member of a well-known planning/design firm, he produces site designs under local zoning or subdivision/land development standards. Regarding those standards, he comments: "In eliminating the worst case, you're probably eliminating some of the best cases, too."⁴

This suggests that local ordinances may be aiming at some level of mediocrity in order to avoid flagrant abuses. A number of prominent 20th century writers and social critics bemoan the large-scale homogenization of the American landscape; they suggest that this sort of institutionalized design is part of the problem. All too many communities have seen (i.e. permitted) rapid development under rigid design standards. Rows of new large-lot homes, many with identical siting on the lot, on acres that once supported rows of corn attest to this almost ubiquitously. Frequently the sense of local identity, the character that possibly attracted the growth activity initially, is diluted, corrupted, muddied, or lost entirely.

5. Do the plant lists given in landscape regulations recommend species that are adapted to the climate and site conditions in the community? The sharing of regulatory language among communities and professionals is an accepted practice. Horror stories abound, however, about plant lists that travel along with regulations, eventually being adopted miles away from the locality for which they were developed. The sad part is that some of the stories are true.

On a less extreme level, a look at two or three average municipal ordinances will reveal much. Plant lists, when they are found, often show little

sign of careful research or expert recommendation. To look at the regulated screening in most communities, one would be inclined to think that screens are defined by the regulations as a solid wall of evergreens. This is very often the case.

6. Is technical assistance from horticulture professionals needed in this process? It appears that such assistance is desperately needed; one of the purposes of this study is to demonstrate that need.

The case studies have been developed to discover some answers to these questions and responses to the concerns that they represent.

Selection Criteria

The selection criteria in these case studies attempt to apply some level of standardization to the selection process for communities and sites. With subjects as vital and dynamic as communities, the level of standardization that can be achieved is admittedly low. Many communities share similarities, but none are the same. The criteria stated here represent an attempt to reduce major variables (such as legal framework), but not to eliminate them. Such differences are used to identify issues of importance in a world where no two communities are alike.

The selection criteria for subject communities can be summarized as follows: The three case study communities must be suburban townships in southeastern Pennsylvania with regulatory language new enough to include

landscape specifications and old enough to have had substantial non-residential development under them.

Subject Communities

1. Communities must all be in the same state. Reasonable travelling distance from the University of Delaware in Newark, DE, might include communities in the states of Delaware, Maryland, Pennsylvania, and New Jersey. The enabling laws of these states grant primary power to regulate land use to different levels of government. (Counties in Maryland and Delaware; townships in Pennsylvania and New Jersey.) Therefore, it becomes necessary to choose one state in order to have the uniformity of one enabling statute. Pennsylvania was chosen because its land use regulation occurs largely at the municipal level and because it offers more communities from which to choose under the distance criteria that were set.

2. Subject communities must have the same type of local government. A municipality in Pennsylvania can be either a city, borough, or township. Each has unique type of governmental structure, its own social and political concerns, and its own framework for planning and regulating land use. Therefore, consistency dictates that this study examine the land use planning/regulation processes for only one type of local government.

Whether to study city, borough, or township was a difficult decision, as all are compelling subjects and all certainly merit study in these matters. The suburban township was chosen to be the subject of this study for a variety

of reasons. In objective terms, suburban townships often have a smaller, simpler structure that provides greater accessibility to those who are making the decisions.

In more subjective terms, the author wishes to study suburban townships because they may have much to gain from a study such as this. The growth and development in many suburban areas brings radical change at a brisk pace; many municipalities grapple with such growth and change using land use instruments adopted before such growth was even anticipated. As the urbanizing trend continues, more "rural" townships turn into "suburban" townships. A number of efforts have been devoted to preserving rural character by formulating incentives for keeping farmland in cultivation. (Transfer of development rights and conservation easements, both described in Chapter I, are examples.) Some communities are experimenting with methods for protecting the rustic character that initially attracted people to make their homes there. Successful programs, such as in Poway, CA⁵, have shown that the protection of public health, welfare, and community character rests with sensitive design of architecture, infrastructure, and vegetation, inspired by a sense of place and encouraged by enlightened regulatory language.

Nan Fairbrother reflects these concerns in her comments on the process of highway development:

Instead of driving along much the same sort of road through the same sort of farmland, we should feel the varying character of the natural regions . . . not only could the vegetation change with the different regions, but so could the style of design and maintenance for different types of landscape. If developed as local landscapes . . . motorways could be a fascinating cross section of the countryside they traverse. Road planting should be considered part of the surrounding scenery. In urban areas, trees might tie in with the design of neighboring recreation areas and in the country could reinforce local landscape character; for even though modern roads must mean urban disturbance . . . they need not mean urban landscape.⁶

Large cities, even boroughs, frequently have character and personality that may be identified, described, and protected by planning policy or other civic ventures. Suburban townships are sometimes not as fortunate in that they are often viewed only as blank slates, bedrooms or sprawling grounds for the metropolis, rather than communities with their own merit. The personality of a suburb is not as easily defined and is therefore harder to protect, making it more vulnerable to "death by development."⁷

This is not to say that cities and boroughs should be excluded from consideration. Clearly many of the issues described in this study may apply to urban centers as well as suburbs. The author has simply identified the suburban township as a good place to start, for reasons of expediency and usefulness to the communities.

3. Communities must have some form of landscape specification in their land use regulations.

4. Subject communities must have enough non-residential development to provide 4-6 case study sites that have been built under current regulations.

5. The Township Manager for each community must have had enough experience in that position to be of help to the study. (The township managers interviewed for these case studies have had no less than seven years on the job.)

Case Study Sites

1. Sites must have a use that is non-residential and non-institutional. The reason is that most landscape specifications are written strictly for non-residential uses; in fact, they are often intended to protect the integrity and character of residential areas from non-residential uses.

2. Sites must have been developed under currently effective regulations. The writers, administrators, and enforcers of those newer regulations are more likely to be located than those connected with older regulations.

Methods

The case studies described in this chapter represent an effort to understand how landscape regulations are developed, adopted, and enforced at the local level. Further, the case studies ask whether there is success or failure

of the landscape regulations, and the systems that support them, in terms of both the goals stated by the municipality and appropriateness of horticultural practices. The process by which each subject community has been studied is described as follows:

A. Regulatory Language

1. Obtain official zoning map, zoning ordinance, and subdivision and land development regulation.
2. Extract sections that give landscape standards or specifications.
3. Examine those regulations for stated purposes (noting implied purposes) and soundness of horticultural specifications.

This section of the case study is guided by the set of questions that appear in Appendix A, Case Study Questions; answers and ordinance excerpts are recorded in the appendix for each township. A glossary of terms appears in Appendix F.

B. Township Manager Interview

This section is intended to discover the processes and problems related to landscape regulation in the township as seen by the individuals who administer such regulations. A second purpose is to determine the sites in the township that fit the case study criteria of a non-residential use developed under current regulations. Interviews with township managers were guided by

the set of questions shown in Appendix A, Case Study Questions. Responses are shown in the appendix for each township.

C. Planning Commission and Zoning Hearing Board

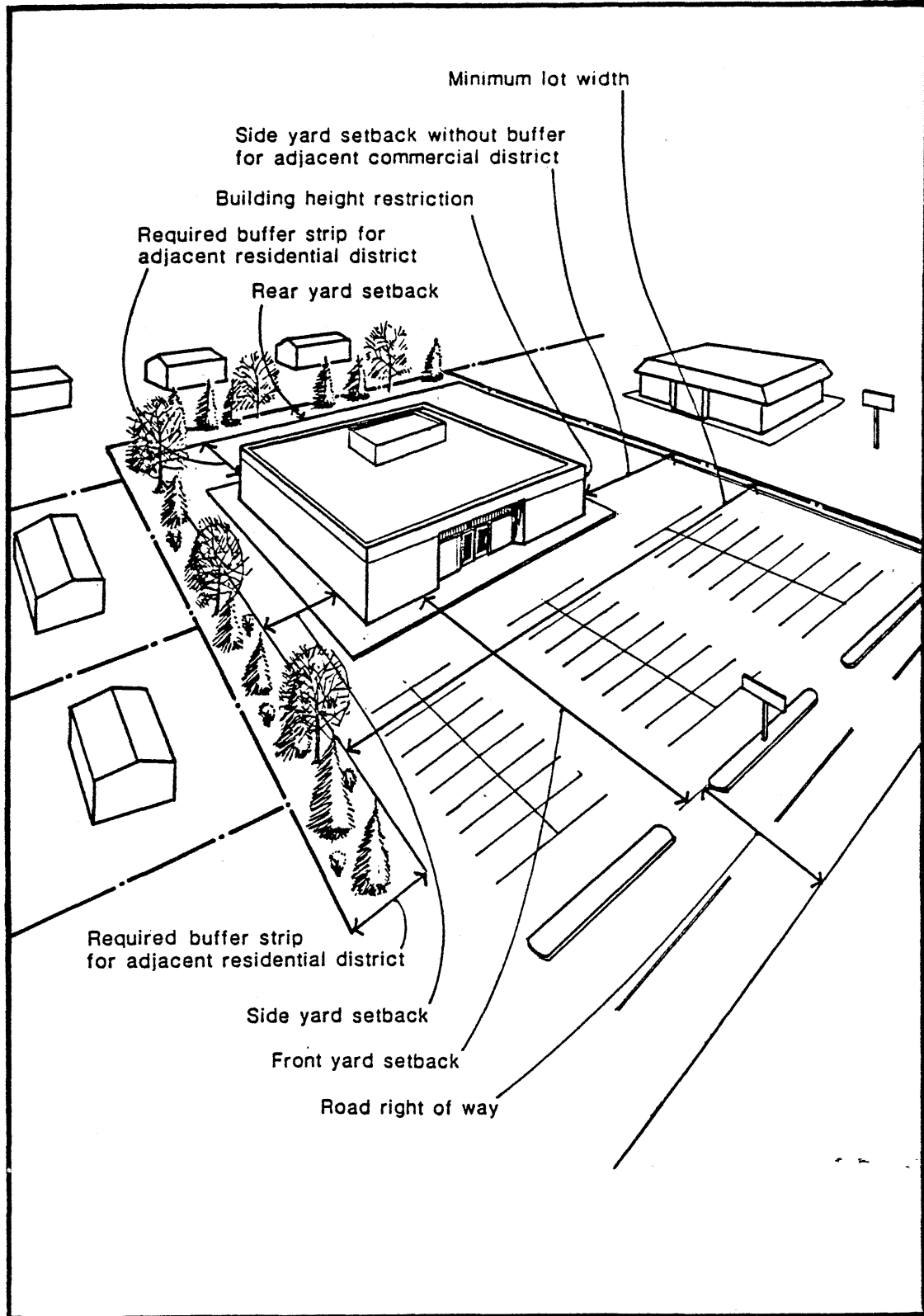
Questions regarding the vocational and avocational affiliations and inclinations of members of both the planning commission and zoning hearing board were posed to the township manager and selected members of both bodies. The purpose was to discover if any of the members had professional qualifications or personal sympathies regarding plantings or vegetation.

D. Site Studies

The purpose of the site studies is to ascertain whether the site is in compliance with the regulations that apply to it and whether compliance with the regulations satisfies the purposes for which the regulations were written. The process concludes with evaluation for horticultural soundness based on the author's criteria of 1.) suitability of plants for the site conditions, 2.) durability of design, and 3.) suitability of maintenance based on the apparent demands of the design. Site studies were guided by the set of questions shown in Appendix A, Case Study Questions. Completed studies of the sites appear with the appropriate township's case study appendix.

Figure 2.1 Site Diagram

The diagram on p. 33 shows some of the elements, regulated by zoning and subdivision ordinances, that influence landscape design.



E. Analysis

This step involves compiling the findings for each township's site studies, township manager interviews, and regulations. The purpose is to determine whether the regulatory process in each township serves to:

1. effectively fulfill stated purposes
2. address implied purposes
3. promote horticulturally appropriate commercial landscapes

The final step in the analysis for each township is to ask whether horticultural expertise seems to be a limiting factor.

F. Conclusions.

The purpose of this final phase is to compare the findings for all three townships and to make conclusions based upon the perceived problems stated at the beginning of this chapter.

CHAPTER II NOTES

¹ Lane Kendig, *et al*, *Performance Zoning* (Washington, DC: American Planning Association, 1980), p. 283.

² Kendig, p. 20.

³ Gary Robinette, *Parking Lot Landscape Development* (Reston, VA: Environmental Design Press, 1976), p. 5.

⁴ 24 May 1985 interview with John Thomas.

⁵ "From Poway: A Model of Comprehensiveness," *Planning*, April 1985, pp. 8-9.

⁶ Nan Fairbrother, *New Lives, New Landscapes: Planning for the 21st Century* (New York: Knopf, 1971), pp. 288,292.

⁷ Term coined by Ada Louis Huxtable, "New York City's Growing Architectural Poverty," *The New York Times*, 12 February 1968.

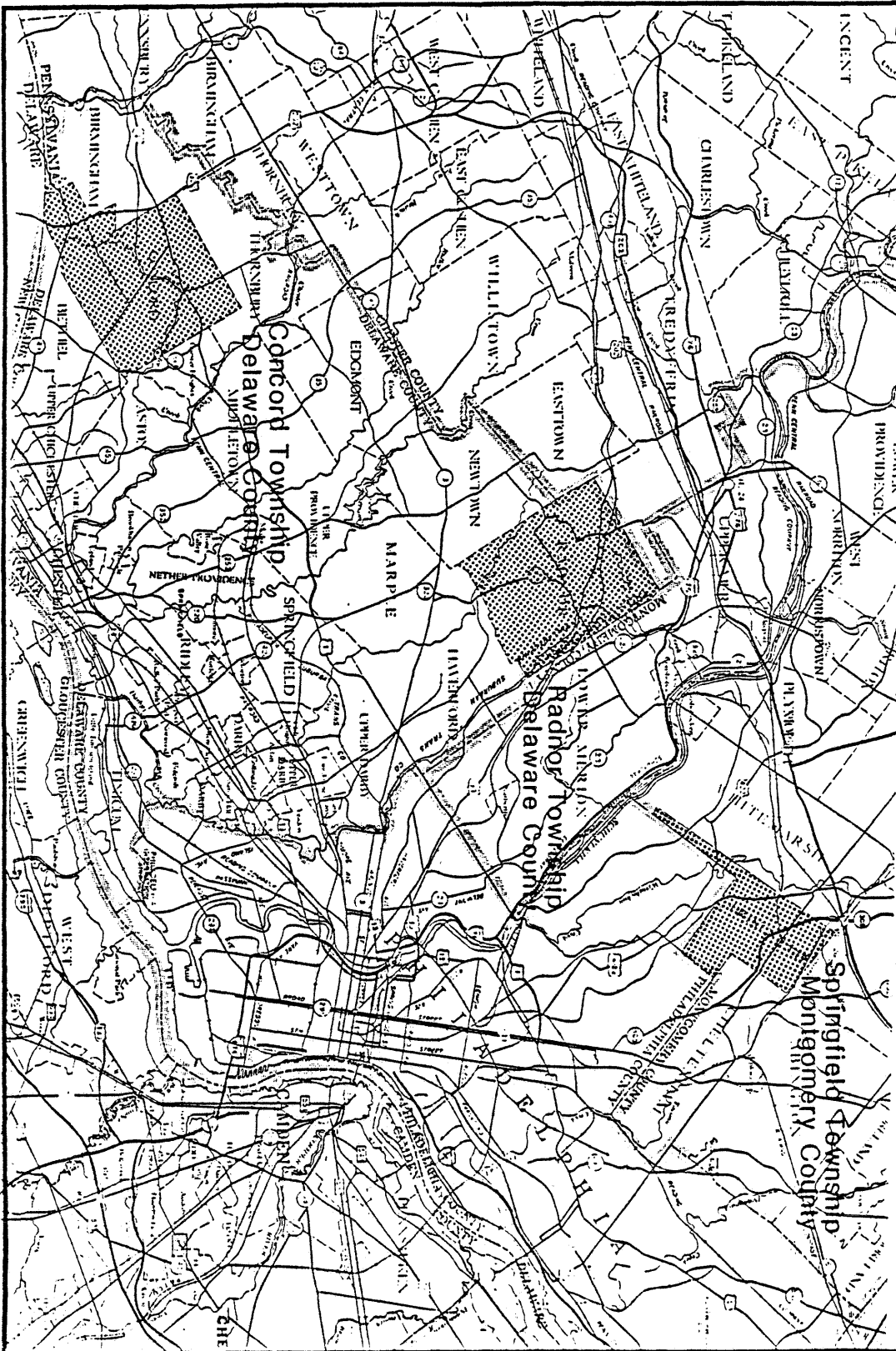
CHAPTER III: CASE STUDY RESULTS

The purpose of this chapter is to distill the detailed information reported in the case study appendices and to illustrate the choices, problems, and opportunities involved in the regulation of landscape plantings. Background for each township is provided in the form of population and land area data and comments on community character and regional influences.

A brief summary of the landscape regulations that appear in the zoning and subdivision and land development ordinances is given. Variations on the municipal planning framework described in Chapter I are noted.

Sites studied are discussed in terms of the landscapes generated by the regulations, horticultural appropriateness, and whether compliance with the regulations tends to serve objectives, when stated.

Figure 3.1 Case Study Community Locations
The locations of Radnor, Concord, and
Springfield Townships are shown on p. 37.



A final analysis for the township comments on the problems and issues related to its regulatory language and objectives and asks whether horticultural expertise is a limiting factor in any of the problems identified.

Concord Township

Concord is a township of the first class, with a land area of 13.78 square miles and a population of 5,764.¹ Located in Delaware County, it contains the communities of Glen Mills and Concordville. It is subject to metropolitan urbanizing influences from Philadelphia and Wilmington, and traffic from the corridors of U.S. Routes 202 and 1. Much of its land area is zoned residential, with commercial and industrial uses fronting the major highways. Many of the residential areas are still quite rural in character and the township's 1683 incorporation date suggests a rich history behind that rural charm.

Regulations

Concord Township's current Subdivision and Land Development Ordinance (S/LDO) was adopted in 1969. Its express landscape regulations appear in resource preservation language encouraging the use of existing woodland in buffers, and a street tree list consisting of seven species. Its Zoning Ordinance contains landscape regulations, adopted incrementally over a period of fifteen years, that give standards for screening, buffering, off-street

parking, and general landscaping. Such standards were compiled from in-house (Planning Commission) recommendations and borrowed and model regulations.

Procedures

Proposed site plans are reviewed by the Planning Commission. Occasionally the Township engages a landscape architect/planning consultant for professional advice in landscape matters, but there is no one within the formal planning structure currently providing such advisement.

Enforcement

According to Concord Township's Manager, the Township prefers to use literal interpretations of its ordinances rather than exercise discretionary power. The regulations provide no instruments for enforcement of landscape specifications, beyond the general provisions of the ordinance.

Sites

The sites studied in Concord Township include Pulsations Night Club, Town and Country Furniture, Westinghouse, and State Farm Insurance. The first two are zoned C2: Planned Business and Commercial, Westinghouse is zoned LI: Light Industrial, and the State Farm site, formerly zoned for conditional use, is now zoned PLO: Planned Laboratory-Office.

1. Pulsations Night Club is located along Route 1 at Glen Mills.

Applicable zoning language requires the entire front setback area to be planted, with a buffer therein, exclusive of access drives; parking lot planting and buffering; general landscaping language requires plantings for all unpaved and unbuilt areas. The latter encourages the preservation of existing trees for such purposes. Stated purposes for the plantings exist only for the parking lot specifications: "... to promote good appearance, character, and value of properties in the Township."

It appears that this site is not in full compliance with the regulations. The front setback area is planted with an all-season ground cover, although it does exceed the one-foot height limitation in places and the required buffer is absent. The expansive, sloping parking lot seems to be somewhat shy of being 10% planted, but does provide the required screen for the residential property to the rear. The general landscaping requirements are met.

The site falls short of compliance with the landscape regulations that apply and horticultural practices, as well, are questionable. Parking lot plantings are at-grade and unprotected from autos. The plantings consist of scale-infested Norway maples and half-dead silver maples. Other species used are generally tough and trouble-free, though trouble will come soon enough with red maples newly planted beneath an overhead utility line.

The parking lot plantings do little to serve the objectives of good appearance, character, and value of properties in the Township. The parking

lot is a sloping expanse of asphalt with a few sorry trees. Apparently the site was intended only to be viewed after dark when the customers arrive.

The lesson learned in this case is that non-compliance does nothing to further the objectives stated and that horticultural appropriateness is left completely to chance in the regulations.

2. Town and Country Furniture is also sited along Route 1, at its intersection with Conchester Pike. The Zoning Ordinance requires plantings in the front setback area and parking lot as well as general landscaping in all areas unoccupied by buildings and paving. The latter provision encourages preservation of existing trees wherever possible. Maintenance is required only for buffers. The purpose given for plantings applies only to the parking lot specifications and cites: "... good appearance, character, and value of properties in the Township."

The Town and Country site appears to exceed the standards set by the Township. The front setback area is in turf and trees and the required buffer appears in the form of gentle earth-mounding. The parking lot appears to have the required proportion of plantings and the general landscaping requirements are exceeded partially through extensive foundation plantings. Additionally, existing trees were preserved in the areas covered by the general landscaping provisions.

The horticulture practiced on this site seems to be quite sound, with the exception of grade changes that appear to have damaged existing trees. Species used in the parking lot are exemplary as a collection of durable performers. Parking lot plantings are at-grade, but curb stops are provided to protect the plants.

As with Pulsations, the only objective stated for plantings is with regard to the off-street parking. Does the lot at Town and Country, through its conformance with the standards, fulfill the purposes of those standards? Yes, because the extent and health of the plantings helps to make the lot a productive part of the overall landscape, rather than a liability.

The high level of horticultural appropriateness seems to be an extra, not resulting directly from the regulations themselves. Statements about maintenance (except buffers), protection, health, or selection of plants are not present in Concord Township's regulatory language, but the Town and Country site shows attention to those details and seems to succeed for this reason.

3. The Westinghouse property sits secluded on a wooded hilltop in a corner of the Concord Industrial Park. The site is a former nursery location. The landscape regulations that apply to this site include screening and buffering along property lines adjoining residential districts, parking lot plantings, and general landscaping with encouragement for use of existing trees. The purpose statement relates only to parking lot plantings.

Compliance appears to be high, in that parking lot plantings exceed 10%, buffers for an adjoining residential area are in place, and existing vegetation is preserved and incorporated nicely into the site design.

The entire site is somewhat unruly, though not uncared-for. Benign neglect seems to be the rule . . . unusual, but not inappropriate for a research and development facility in a wooded environment. Horticultural practices appear to be sound: plants are healthy, plant selection is thoughtful, and lot plantings are protected with curb stops.

Are objectives fulfilled? (Again, objectives relate only to parking lot plantings.) Yes, and once more horticultural appropriateness that makes the site work; this seems to be wholly independent of the regulations.

4. The State Farm site is an approved conditional use, presently less than a year old, at the intersection of U.S. Routes 1 and 202. The applicable regulatory language includes provisions for parking lot planting and buffering, general landscaping ("in harmony with the architecture and using existing land forms and vegetation where appropriate"), street trees, and preservation of existing trees. The purposes given, once again, only relate to parking lot plantings: ". . . to promote good appearance, character, and value of properties in the Township." The site appears to be in compliance, at a minimal level, with the regulations. Large existing trees have been preserved, the parking lots appear to be occupied by 10% plantings, and the general landscaping provisions have been met.

Additionally, this site has a loop road, a condition of the conditional use arrangement, that is part of a future plan to relieve nearby Painter's Crossroads of its heavy traffic load. Requirements for an earth-mounded buffer between the loop road and the building(s) have been met.

There are some horticultural problems on the site in terms of establishment of new plantings. A number of evergreens (spruce and yew) are dead or dying and large sodded areas are giving way to bare ground and rill erosion. Otherwise, the plants are well-selected and thriving. Maintenance is moderate. Earth-mounded buffers succeed enormously in deflecting the noise and commotion of a busy intersection.

Even with dead and dying plants, this site is still in compliance as the regulations do not specify maintenance, much less replacement. Does this compliance serve the objectives of the regulations? A decision on this one is difficult as the plantings are still so new. For now, however, the site may grow into a state where it fulfills those objectives. It has a good start, especially with the existing vegetation, but presently it fails. Compliance may be there, but horticultural appropriateness and goal-fulfillment suffer.

Analysis

Under what conditions are objectives fulfilled in this case study? It seems that in the two situations where objectives were met, compliance alone

was not enough to do it. Compliance paired with appropriate horticultural practices helped the sites to fulfill stated objectives. This suggests, possibly, that regulations need to become more specific in horticultural standards so that compliance, in itself, ensures fulfillment of objectives. That is, however, if the objectives are valid. Does the Township really mean to state objectives for landscape plantings only in the case of parking lots? The sites of this study were tested against that objective because it was the only one given.

Other issues related to Concord Township's landscape regulations include:

1. building coverage ratios. Properties zoned C2: Planned Business and Commercial limits lot coverage by buildings to 25%. Whatever ground remains after parking, loading, and access drive pavement is laid is to be planted. This explains why Pulsations has so much asphalt and so little area to which the general landscaping language applies. Properties zoned PLO: Planned Laboratory-Office have coverage requirements that limit buildings to 20% of the site, with no more than 60% of the site covered by an aggregate of buildings and pavement. By limiting the total impervious surface coverage and not just buildings, the PLO requirements succeed in limiting that coverage and leaving less of the general landscaping provisions to the discretion of the developer.

2. plant lists. The only one contained therein is in Section 504 of the S/LDO. Species are limited to ten: "moraine honey locust, little leaf European linden, pin oak, scarlet oak, London plane tree, red oak, columnar-type maples, sugar maple, norway maple, and sweet gum." At least six of these have

exhibited certain weaknesses in performing under street conditions, making such general recommendations questionable. As the Township exercises no discretionary power in these matters, those species are the only choice available to developers.

Horticultural expertise is needed to introduce sound planting standards and thoughtful plant lists; therefore it can be considered to be a limiting factor in the case of Concord Township.

Radnor Township

Radnor is a township of the first class located in Delaware County approximately 10 miles west of Philadelphia. It was settled in 1681 and incorporated in 1901. The township encompasses land area of 14 square miles with a population of 27,676². It contains the communities of Wayne, St. Davids, and Rosemont; its stately old houses and broad vistas suggest a past and present of genteel suburban living. Commercial properties are concentrated largely along Route 30, Lancaster Pike, with pockets of campus-type business developments throughout the Township.

Regulations

Radnor Township's Subdivision and Land Development Ordinance was adopted in 1983. It contains provisions for parking lot plantings, buffers, and street trees (with a list of 20 species.) The buffer matrix, based on land use intensity and the multiple plant lists for buffering, is clearly influenced by

principles of performance zoning, introduced in Chapter I. The Subdivision and Land Development Ordinance was written by a planning consultant with extensive performance zoning experience. The Zoning Ordinance, adopted in 1981, contains provisions for screening and general landscaping.

Procedures

Proposed site plans are reviewed by the Township Manager and Township Engineer. There are no individuals with professional qualifications to review landscape plans within the formal structure, and no one is retained for that purpose.

Enforcement

The regulations provide no special instruments for enforcing landscape standards, beyond the general provisions of the ordinance. Occasionally the Township exercises discretionary power and negotiates with developers for adjustments to provisions of the Subdivision and Land Development Ordinance. Such negotiation takes place when a developer requests an exception that the Township may grant in exchange for concessions that will provide additional benefit to the public.

Sites

The sites in the Radnor Township Case Study are Rosemont Business Campus, zoned CO: Commercial Office; Kravco, zoned PB: Planned Business; and Fidelity Court and Radnor Corporate Center, both zoned PLO: Planned Laboratory-Office.

1. Rosemont Business Campus is located in a residential/village area on Conestoga Road, removed from the concentration of other commercial properties on U.S. Route 30. The purpose for the CO zoning district is to "serve as a transition between commercial and residential areas."

The landscape regulations that apply to this site include provisions for "landscaped ground and suitable screening," off-street parking, street trees, and buffer yards. The purpose given for plantings is only in terms of parking (for maximum protection from sun for vehicles) and screening (to safeguard the character of the residential areas.) Plants must conform to the American Association of Nurserymen standards for nursery stock and be chosen from lists provided. Alternative species are acceptable if proven to be hardy in the area and tolerant of prevailing site conditions; the burden of proof is on the developer.

The landscape plantings on the site appear to exceed the standards given in the regulations. A hedgerow (class B buffer according to the regulations) exists as a screen between the property and residential neighbors. The parking lot appears to be 10% planted, with trees that fit the S/LDO requirements of being relatively trouble-free and tolerant of parking lot conditions. The street trees used are taken from the list on the S/LDO and conform to the AAN standards as required. Mature existing trees have been preserved and show no signs of decline.

The horticultural practices on this site are relatively sound. Plants selected (excepting the birch) are appropriate for the site conditions, parking lot plantings are above-grade and curbing is used to protect plants.

Maintenance efforts are apparent, although the extremely narrow grass strips in the planting islands generate maintenance efforts that would be better spent elsewhere. The intimate scale of the foundation plantings suggest a residential feeling rather than commercial.

Does this site fulfill the objectives of maximum protection to vehicles on lot and safeguarded character of residential areas? Surely, no amount of planting can assuage the insult to the adjacent residential neighborhoods made by the architecture on the site. The landscape designer apparently tried to compensate by generating a residential-type design. The plantings certainly do nothing to add to that insult and probably tend to take the edge off somewhat. For that reason, those plantings succeed in furthering the stated objectives.

2. Kravco is located on Route 30 in the community of Wayne.

Regulations applicable to the site include provisions for off-street parking and buffer strips in conjunction with rear and side property lines that face residential uses. The purposes for plantings cite "maximum protection from sun for vehicles on the lot." The regulations require that all plants used be chosen from the plant list provided or be proven suitable for their proposed use and site conditions. Plants must be nursery-grown and in compliance with AAN nursery stock standards.

Longwood Program

Compliance with the regulations is indicated: buffers are in place, the parking lot is 10% planted, and the plants used are relatively trouble-free.

The site, however, has a cold, sterile character consisting of trees, turf, and imposing architecture. The horticultural practices are sound, although the narrow grass strips in the planting islands are far from expedient.

Judgement regarding fulfillment of objectives is difficult as the site is less than one year old. The plantings are still quite young and the architecture so stark. Even at full height, the hawthorns and lindens that prevail will hardly achieve scale with the building. The objectives, however, only refer to protecting vehicles in the parking lot. For that, the trees in the lot will succeed in time.

3. Fidelity Court is a large, campus-type development on Radnor-Chester Road, situated among many other properties that are similarly zoned. The regulatory language that applies to it includes provisions for plantings in parking lots, areas fronting residential areas (in this case, across the street), and protection for existing trees and landforms. The purposes given for such planting include protection from sun for vehicles on lot and safeguarding the character of residential areas.

The site exceeds all standards given: the lot is more than 10% planted, existing trees have been preserved, and the specified buffer treatment is used.

Plant selection is according to the lists provided and/or set criteria for performance.

In horticultural and design terms, the site is exemplary. The site design effectively and attractively separates pedestrian and vehicular traffic. A trellis with climbing vines functions a part of the required buffer. Plantings are effectively protected from auto damage and all plantings are well-maintained and durable. Narrow strips of turf in the parking lot islands, and extreme grade changes for existing trees, are the only questionable aspects. The stated objectives for plantings on this site are not only met, but exceeded.

4. Radnor Corporate Center is a massive, campus-type property on Matson Ford Road. The regulations that apply to the plantings on this site include buffer plantings in conjunction with property and street lines abutting residential districts, off-street parking, and existing trees and landforms. The purposes stated include maximum protection from sun for vehicles on lot and safeguarding the character of residential areas.

The site as it appears exceeds the standards given in the regulations. Parking lots are more than 10% planted, specified buffer plantings are in place, and existing trees, woodlands, and landforms have been preserved.

Much attention has been given the horticultural details of the site. Parking lot plantings are protected from damage from autos, and maintenance

is meticulous. One drawback regards scale, in that the pedestrian ways are not reduced to human scale and the grand scale of the site tends to overwhelm.

Objectives stated in the regulations as they apply to this site are fulfilled. Parking lot plantings afford protection to vehicles and the character of nearby residential areas is safeguarded.

Analysis

On the Radnor Township sites studied, stated objectives are fulfilled and horticultural practices are acceptable throughout. Possible reasons for this broad success are explored in the following section.

1. The regulatory language is very good. The language even addresses horticultural appropriateness and makes it a condition for compliance. In Concord Township, it was horticultural appropriateness that made the difference between success and failure in fulfilling the stated purposes for landscape regulations.

2. Can the success of the sites be attributed, at some level, to the apparent conscientiousness of the developers? No amount of regulation could have brought about the finer touches found on sites such as Fidelity Court, leading one to think that possibly the quality landscape generated by the developer was guided by, but independent of, the regulations.

3. Could such success be a function of wealth? Thoughtful and innovative regulatory language does not come cheaply and, fortunately for Radnor Township, the governing body has the savvy to recognize that and the budget to pay for it. As well, conscientious developers usually understand that good design is good business and are more willing to spend the additional money and effort to have it.

As so many of the factors noted here are interrelated, hard and fast conclusions would be difficult and probably inaccurate. The success or failure of regulatory language can be attributed to any of a number of factors.

There are specific aspects of Radnor Township's S/LDO that are worth noting. The first is its flexibility in standards for buffering and other landscape treatments. Flexibility is a common dilemma in such ordinances. How to write language that discourages poor design, but does not stifle creative design solutions, is a issue that is difficult to resolve. Often the issue is ignored in favor of the perceived security of strict standards. In the case of Radnor Township's S/LDO, a "cookbook" approach is offered for those who wish only to meet the minimum buffering requirements and to devote minimum amounts of time, money, and energy to design. Alternative proposals are encouraged and considered, on the other hand, provided that the plants and design meet the same performance standards. Selection of plant species for buffers, street trees, and general landscaping is approached similarly. A list of plants is provided; exceptions are welcome if they meet the appropriate performance standards.

The buffering standards also accept the use of a variety of material for that purpose. Planted vegetation (evergreen and deciduous), existing vegetation, walls, berms, and fences are all acceptable, with approval.

Radnor Township's buffering standards also allow flexibility as to the location of the buffer, so long as it occurs somewhere within a required range. This may not initially seem important; however, it permits a broader range of thoughtful design solutions. Buffers are considered to consist of four variables: distance, landform, and vegetation - type and density.³ This language allows the site designer to manipulate those variables in order to achieve the best buffering possible under the existing conditions. The language reflects an understanding that the lot line is not always the most effective location for a buffer or screen.

Finally, the plant lists that appear in the buffering language offer a number of options within themselves and encourage the use of mixed coniferous and deciduous plants. Additionally, the lists show a variation in the size requirement from species to species. At first reading, this point goes unnoticed, or might be regarded as eccentric or arbitrary. A talk with the author of the ordinance revealed that the size gradations reflect relative cost of the listed species at the time of writing. The purpose is so that no species is discriminated against based on cost. Species diversity is thus enhanced and the "least cost" formula includes more options.

Longwood Program

All landscape standards in Radnor Township's S/LDO require that plants be nursery-grown and meet the nursery stock standards set by the American Association of Nurserymen. The use of these standards discourages a number of problems from the start: poor or weak form, major insect infestations, and poor root structure.

Is horticultural expertise a limiting factor here? No. It certainly required a degree of horticultural savvy to compile the plant lists and other performance specifications that appear in the S/LDO; therefore, Radnor has that benefit written into its regulations. Further experience with the regulations may find Radnor Township in need of someone professionally qualified to field alternative proposals. For now, however, Radnor Township is doing better than most.

Springfield Township

Springfield is a township of the first class, located adjacent to the northwest section of Philadelphia. It has a land area of 6.2 square miles and a population of 22,000.⁴ Its character is largely residential, having old and new neighborhoods, with business and commercial properties concentrated largely along Bethlehem Pike.

Regulations

The current Subdivision and Land Development Ordinance was adopted in 1950, Zoning in 1976. Amendments providing landscape planting

specifications, provided by the Montgomery County Planning Commission staff, were adopted for both ordinances in 1975. Landscape planting specifications are general, requiring landscape treatment for off-street parking facilities, street trees, and portions of lots not occupied by buildings or parking facilities.

There is no plant list.

Procedures

Proposed site plans are reviewed by the Planning Commission. The Township relies on Planning Commissioner Paul Meyer, Director of Horticulture at the Morris Arboretum of the University of Pennsylvania, to provide professional expertise in landscape matters.

Enforcement

Landscape standards are enforced as needed at the discretion of the Planning Commission. Site plans are kept on file and properties with dead or missing plants are considered "nonconforming." The Township occasionally exercises discretionary power in negotiating with developers; additional vegetation is often bargained for.

3. K-Mart Shopping Center, located on Bethlehem Pike, was the first property developed in the Township after adoption of the landscape specifications in 1975. The regulatory language that applies to it includes provisions for plantings in off-street parking areas and at lot lines. The purposes stated include traffic safety and a number of environmental concerns.

The site complies with the regulations at a minimal level. Horticultural practices, however, are lacking. Little or no maintenance was observed. Parking lot planters are above grade, though not designed for the overhang of automobile bumpers or pedestrian circulation. There are many dead, dying, and mechanically damaged plants. Neither debris, nor dead plants, are removed. Choice of some plants (e.g. *Taxus* for planters with obviously poor drainage) indicates little thought or skill.

With regard to stated objectives, however, the site design does serve to separate and control vehicular traffic, but does little more. The site certainly does nothing to further the environmental objectives stated.

4. Magnavox is an I: Industrial zoned site in the midst of a residential neighborhood. Regulations require planting strips at lot lines, buffers on lot lines fronting residential properties, and 2% plantings in off-street parking facilities. Stated purposes cite traffic safety and a number of environmental concerns. The site, as it appears, meets all standards provided in the regulations.

Horticultural practices are sound, though the required lot-line plantings tend to box in the site like a green wall. Plants used are mixed evergreen and deciduous. Plantings succeed in separating and controlling vehicular traffic; therefore stated objectives are fulfilled.

Analysis

In all but one site of this case study, objectives were met and horticultural practices were acceptable. The site that fails on both accounts was the very first one developed after Springfield Township adopted landscape specifications. The fact that the site was developed before Springfield Township had the benefit of Paul Meyer's professional counsel is clear. Springfield Township's regulatory language offers little encouragement for sound horticultural practices and it is entirely possible for a site (such as this one) to be in compliance and still not meet the stated objectives. Mr. Meyer's involvement in the process helps to encourage horticultural appropriateness on the sites and this increases the chances that the objectives will be met.

Further comments regarding Springfield Township's regulatory language are in order. First, those objectives stating ecological concerns (such as aquifer recharge, air quality, etc.) reflect the intentions of the health, safety, welfare constraints mentioned in Chapter I. The fulfillment of such objectives, however, is difficult to ascertain on a site-by-site basis. Additionally, one site

alone cannot fulfill such objectives. Regulations and design in the entire community and region must reflect that consciousness in order to have any impact. This is accomplished, however, one site at a time.

Finally, the regulations give few specifics on standards and allow a degree of flexibility. Such vagueness could be disastrous if not for the guidance provided by Paul Meyer. Mr. Meyer checks proposed plants and designs; he occasionally meets with a developer and recommends plants particularly suitable for a site being proposed for development. His involvement permits Springfield Township to have the confidence to exercise the discretion permitted by the regulations.

An added bonus observed in Springfield Township is that many "grandfathered" properties, those developed before the landscape regulations were adopted, have installed landscape plantings voluntarily. The Township Manager explains that, apparently, the benefits of the plantings that resulted on other sites from the new regulations were recognized and sought after.

Conclusion

The conclusion of this chapter brings the discussion back to the questions posed at the beginning of Chapter II. Also, a number of additional issues were uncovered in the process of conducting the case studies.

1. Are communities clear on what should be achieved through adopted landscape regulations? Not always. Governing bodies recognize the need to frame purpose statements in terms of health, safety, welfare; therefore, agenda items not readily couched in those terms often go by the wayside.

Purpose statements sometimes show a lack of understanding as to how vegetation can serve the public health, safety, and welfare; therefore, vague statements about "natural environment" and "beautification" are often made and ignored.

Community leaders need to understand that aesthetic concerns are valid, and while their expression in local land-use regulations is certainly limited, it is not prohibited. It is also important for community leaders to understand that the functional benefits of vegetation clearly serve the community health, safety, and welfare; to use such arguments for function as a veil for aesthetic concerns only weakens the case for both.

As with Springfield Township, comments in the objectives that cite such items as "ground water recharge, air purification, and oxygen regeneration" seem to be nominal, as there is no method provided to test performance against those objectives. Instead, they seem to screen aesthetic concerns that are so reluctantly expressed, but so important to those who live in the community.

Furthermore, the objectives found are seldom complete in regard to the total landscape. Concord Township's regulations give objectives only for

parking lot plantings. This is not to say that other aspects of the landscape are not regulated, but objectives are not provided for them. This makes evaluation of performance difficult because only one aspect of the landscape can be measured against objectives. No direction is provided for the other aspects regulated.

Additionally, purpose statements are often incomplete. Much work is needed in identifying needs and objectives and placing them in purpose statements that are meaningful and able to be evaluated.

2. Does compliance with the regulations fulfill those objectives? Not necessarily. This could be for a number of reasons:

- a. regulatory language is ineffective in reflecting purposes.
- b. flexibility options are not policed by individuals professionally qualified to do so.
- c. regulatory language serves some other agenda.

3. Do communities seek horticultural expertise when drafting landscape regulations? Not directly. It is important to know that when regulatory language is widely shared or borrowed (and it is) any horticultural expertise represented in the original document (possibly written by a professional planner or planner/landscape architect) goes along. The Radnor S/LDO was written by a professional planner whose background in performance zoning ensures a certain sensitivity to quality of design, including plants. Performance zoning was inspired by a need for language that

encourages good design and relies heavily on vegetation to achieve many of its aims.

4. Are landscape regulations too restrictive, i.e., do they stifle good design in attempting to discourage poor design? In these case studies, a variety is represented. In Concord Township, the restrictive regulations, coupled with no exercise of discretionary power, presents a situation where simple compliance yields results that are less than desirable. It takes a special effort on part of the developer to go a step beyond the regulations in order to merely do something horticulturally acceptable.

Radnor Township, on the other hand, permits flexibility and entertains alternative proposals. Radnor succeeds in encouraging thoughtful design. Springfield Township's regulations would be too restrictive if literally adhered to. With the help of Paul Meyer, however, the Township has the confidence to accept alternative proposals and the result is largely successful.

How do you regulate a practice that, in its highest form, combines art and science for a dynamic and unique result? This is one of the questions raised by the very idea of regulating landscape design. Is it possible to condense into regulatory language a process that requires technical expertise, creativity, and a good measure of common sense? In reality, the local government does well to simply enforce a few minimum standards.

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In search of a least-cost solution, some developers find the least quality solution instead. How is regulatory language written so as to accommodate the good intentions and creativity of conscientious developers while guiding the work of firms that prefer to follow a recipe?

The case studies give examples of local governments dealing with this problem at various levels. Concord Township, on one hand, appears to be somewhat trapped by its own sense of fairness and control . . . locked in to its own fairly rigid regulations by hesitating to exercise any discretionary power. Radnor Township, on the other hand, permits certain degrees of flexibility, within set limits, with favorable results. That flexibility, and the regulatory language that frames it, comes with a cost and has its own liabilities.

Lane Kendig, author of *Performance Zoning*, suggests that the flexibility in Performance Zoning may find limits in administration rather than the language itself:

Further research may provide infinite flexibility through the conversion of solutions into a design formula. The question to be asked is whether that degree of design flexibility is sufficient to warrant the additional complexity and increased costs of administration. Frequently, the answer will be negative.⁵

Radnor Township has shown, however, that even a cookbook approach can include some sensitivity and variation. Radnor is the exception.

Moreover, the regulations in all townships focus largely on minimum amounts of planting (e.g. 10% in parking lots) but give little or no attention to the techniques of planting and design that will help the plantings to thrive and to succeed. More attention is needed in areas of soil preparation, drainage, planting techniques, and maintenance.

This study has pointed to a number of problems in landscape regulation. It is important to note the complexity and diversity of such local regulations . . . and that failure in the results of that language can be for a number of reasons. Except with the most sophisticated of regulations, the relative success of plantings presently rests heavily on the good faith and intentions of the developer.

5. Do the plant lists given in landscape regulations recommend species that are adapted to the climate and sites of the community? Concord's plant list is severely limited. Radnor's show some thought and permit some flexibility. Springfield has none, but Planning Commissioner Paul Meyer has the expertise not only to check proposed plants, but to recommend adapted species as well. Therefore, they have their pros and cons. If a township has no horticulturally expert person on hand, it is best to have a an excellent plant list . . . prepared locally by someone professionally qualified.

6. Is professional assistance needed? Absolutely. In one or all of the following areas:

- a. input for writing regulations
- b. development of locally suitable plant lists
- c. design review, esp. where flexibility is indicated
- d. *ad hoc* advisement
- e. on-site inspection

This is not to suggest that horticulturists should be writing ordinances. Ordinance-writing should be left to those individuals professionally trained to do so. However, horticultural counsel is needed, and wanted. Presently, that information is provided by professional planners, planner/landscape architects, or attorneys who garden on the weekends. The information provided is sometimes quite good, often not. Some of the most excellent horticultural specifications seen to-date by this author were written by a planning consultant who had very competent horticultural advice; the most dismal were written by a well-intentioned but naive landscape professional. Horticulturists have something unique to offer this process: specialized skills and knowledge possessed by few others. Collaborative work between horticulturists, landscape architects, and planning professionals can do much to move regulations toward achieving important community goals.

CHAPTER III NOTES

¹ 18 October 1985 interview with Jack Cornell, Concord Township Manager.

² 7 November 1985 interview with Charles Guernsey, Radnor Township Manager.

³ Lane Kendig, *et al*, *Performance Zoning* (Washington, DC: American Planning Association, 1980), p. 41.

⁴ Donald Meserve, *Comprehensive Plan Update: Demographic Profile* (Wyndmoor, PA: Springfield Township, 1984), p. 2.

⁵ Kendig, p. 283.

**CHAPTER IV:
IDEAS FOR PUBLIC HORTICULTURE ACTION**

The purpose of this chapter is to present ideas for establishing dialogue and interaction between professional communities. As a small number of individuals are already breaking that ground, it is important to examine their activities and to learn from their experiences.

The Nature of Nonprofits

A number of authors have commented on the nature of not-for-profit organizations and why they are extremely suitable for interdisciplinary efforts aimed at solving problems at a local level. Frank Beal, in *Private Planning for the Public Interest*, makes such comments:

Less constrained than government agencies, private groups are free to experiment, to take risks, and to work in unconventional ways.¹

He suggests that some of the roles to be played by private, non-profit organizations could include those of watchdog, facilitator, advocate, planner, or implementor.²

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Christopher Wright has made such comments specifically about arboreta. According to Mr. Wright:

Few institutions are addressing themselves in a systematic way to the solution of these problems [post-World War II urbanization and its effects on the environment] which solutions touch questions of land management. In areas whose dominant vegetation is woody plants, this might be considered part of an arboretum's interests.³

He continues . . .

While universities will continue to provide a framework for specialized research in separate disciplines . . . they may not be able to fulfill other functions, one of the most important of which is the problem-oriented integration of different branches of knowledge at the local level, in combination with advocacy of the solutions proposed.⁴

Individual researchers seldom attempt long-term projects, because either the pressure on them to publish or the insecurity of short-term government research grants forces them to take up projects that are likely to yield immediate conclusions. However, an arboretum is in a position to both focus on critical questions and to make long-term commitments to the collecting and storage of data whose value in answering them may not be apparent for many years.⁵

While arboreta and botanical gardens seem to be in a position to carry on long-term research and advocacy, they do function under the very same funding constraints described by Mr. Wright as not being a problem for them. Short-term funding is a reality and continuing projects are especially difficult to fund because they are eventually perceived as part of the organization's normal operations. Grant money is especially scarce for work that falls into the category of operating expenses.

Ron Fleming of the Townscape Institute suggests that the framework to which Mr. Wright refers is often imperfect or incomplete. He asserts that the

rewards systems in most academic and non-profit institutions are not conducive to risk-taking and leadership in the community.⁶

Frank Beal also warns that the unique systems that make non-profit organizations fertile ground for such interdisciplinary work need attention and improvement:

Countless private not-for-profit groups have been formed to work on their cities' planning and development problems. What these organizations do, how they operate, which of their programs have been successful, and how they were started, is information which is frequently sought but imperfectly shared.⁷

Existing Programs

Preliminary research for this study led to a handful of isolated cases where collaborative relationships between professionals in public horticulture and community planning have been established. A closer look revealed that these relationships, though independent of one another, share certain similarities. Among them, individual initiative and self-motivation, coupled with general endorsement from employers, stands out. These and other patterns will become more apparent as examples are given.

New England Wild Flower Society

Frances Clark is Education Director for the New England Wildflower Society at Garden in the Woods in Framingham, Massachusetts. She is a member of the Sudbury, MA, Conservation Commission, which is charged with

monitoring local compliance with the Wetlands Act adopted by the Commonwealth of Massachusetts. The Act addresses issues of flood control, water quality, and fisheries. The Commission, more specifically, monitors development activities that come within a specified distance (100') of any wetland. The different types of wetland are defined by the Act as those which support certain plant associations; indicator species are named.

As the only horticultural or botanical professional on the Commission, Ms. Clark is called upon to instruct her fellow Commissioners, as well as private developers, in recognizing those indicator species in all seasons. The collections and facilities at Garden in the Woods are used for these purposes. Additionally, Ms. Clark visits proposed development sites with a developers, noting indicator species and discussing the restrictions that the Act imposes.

Because the Wetlands Act applies to both commercial and residential land uses, even private residences built near wetlands must comply. For the spring season of 1986, Ms. Clark developed a workshop for planners, commissioners, developers, and homeowners on wetland species identification. She plans for future workshops with an emphasis on landscape plants adapted to wetland conditions.

Ms. Clark reports that the endorsement afforded her Conservation Commission activities by the Society is solid. While the charter of the New England Wildflower Society does not specifically state this activity in its purposes, the Society does promote the conservation and preservation of native

plants through public education. As such, Ms. Clark believes that her work on the Commission falls well within the general purposes of the organization and her position as a professional within that organization.

The support given her activities by the Society indicates that the leadership of the organization is in agreement. Part of the endorsement comes in the form of the liberty that Ms. Clark has to integrate Conservation Commission business into her work day. On a given day, this could include discrete amounts of field work, planning for workshops (or simply bits of correspondence or an odd telephone call). Additional support comes from use of the collections and educational facilities.

It is not unusual that Ms. Clark's work on the Conservation Commission should be motivated by her own interests and does not appear on a job description. Such a post is appointed and voluntary and therefore could not be included as such a requirement. All Commissioners approach their duties as private citizens, each bringing his or her own professional skills and inclinations. What is unusual is that Ms. Clark's employer has an interest in, and purposes related to, wetlands, native vegetation, and conservation.

The costs to the New England Wild Flower Society for such activity appears to be small. It seems that Ms. Clark's time spent on the job in Commission work is balanced by time spent after hours on many aspects of her work. Other costs for educational programs include clerical time, overhead for

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use of educational facilities, honoraria, and publicity (printing, etc.) for the educational programs.

Benefits to the Society come in many forms. The workshops widen the audience for the Society, bringing new visitors to Garden in the Woods, and providing income from registration fees. The Society provides an important professional service to the community. Ms. Clark's activity as a private citizen, but also a professional representing the organization, helps to strengthen the Society's public service posture.

Would the Society ensure that such activities continued in Frances Clark's absence? As Ms. Clark's involvement with the Conservation Commission is self-motivated and voluntary, such attention would probably disappear in her absence unless somehow written formally into the purposes and programs of the organization. This is a common reality with almost all organizations; its importance as an issue will be indicated in further examples.

Transition Zone Horticultural Institute

Charlotte Minor is a Staff Horticulturist at Transition Zone Horticultural Institute in Flagstaff, Arizona. Excerpts from correspondence with Ms. Minor explain some of TZHI's recent involvement with community planning activities:

The City of Flagstaff's Director of Planning contacted TZHI about developing a list of plants which they could give to

commercial developers to assist them in complying with the landscaping ordinances . . . The Planning Department staff felt that if they were going to require landscaping, they should be able to provide a list of plants and references of planting techniques.⁸

Ms. Minor went on to explain TZHI staff members' commitment to providing plant lists based on direct experience in growing each species under local conditions. She also stressed the need for water conservation in the American southwest and the importance of recommending plants that are thrifty with water. Plans are to periodically revise the lists as TZHI's research base grows. She also mentioned the positive response to TZHI's participation, on part of developers and the City.

In the case of Transition Zone Horticultural Institute, the decision to provide technical assistance to the City of Flagstaff Planning Department was made by the staff as a group. The request was brought up at a staff meeting and a proposal was written, later approved by the Director. The proposal was considered in light of TZHI's chartered purposes and receives the full endorsement of the organizational leadership.

Ms. Minor is the lead person in the activities, though she emphasizes that most of the staff is involved, and that the plant lists were developed by the staff in collaboration with members of the Forestry Department at Northern Arizona University. The level of commitment is such that the technical assistance work would go on in her absence. Although the work is performed by TZHI free of charge, it does not involve voluntary appointments

as described in the Garden in the Woods example. Therefore, all work is done strictly under the aegis of TZHI, with no one individual functioning in the "private citizen" mode.

The costs to TZHI include roughly two weeks per year of staff time and some clerical and support resources. Ms. Minor explains that she occasionally takes work home related to this technical assistance effort, but often takes home other work as well.

The benefits derived by TZHI include positive community relations, a broadened audience, increased visibility, and broadened experience for staff members. Benefits to the Flagstaff community include a competent professional source for plant and planting information, as well as increased consciousness of the regional water shortage on part of those installing commercial landscapes.

Bloedel Reserve

Mr. Brown is Curator at the Bloedel Reserve, which is located on Bainbridge Island near Seattle, Washington. His activity in public planning assistance is similar to that of Frances Clark's in Massachusetts. He has recently completed an appointment on the Bainbridge Island Planning and Advisory Council and continues to serve on the Bainbridge Island Water Coordinating Committee. The latter examines water supply conditions and related issues on the Island. Both are voluntary appointments. Mr. Brown

serves as a private citizen, bringing to these bodies a valued background in natural resources management as well as horticulture.

There are no express statements in Prentice Bloedel's purposes for the Reserve that require such activity; however, there are general purposes that can be interpreted as supporting civic/environmental work taken on by staff members. Endorsement comes in the form of Board approval for the activities, some clerical support, and freedom for Mr. Brown to conduct some Committee business, at his discretion, during the work day. As with some of his normal work responsibilities, Committee business goes into the off-hours.

The costs to the Bloedel Reserve for these activities include clerical time and materials, mailing costs for meeting minutes, and telephone costs. The benefits enjoyed by the organization due to Mr. Brown's civic involvement include positive public relations, political contacts, and input on planning and water resource issues on the Island.

In terms of organizational commitment, would the Bloedel Reserve pursue further public policy involvement in Richard Brown's absence? Probably not, for the reasons that Mr. Brown's current appointment is voluntary and could not be automatically filled by a successor. Additionally, Mr. Brown's activities in public planning come from a personal interest and philosophy rather than directions from a purpose statement or job description.

Morris Arboretum

The Morris Arboretum of the University of Pennsylvania is in the northwest section of Philadelphia. Its leadership, including Dr. Rhoads and Mr. Meyer, both department heads, exhibits a strong commitment to applied research and getting needed information, including the results of that research, out and into use. The Morris Arboretum's chartered purposes include statements that support public service activity, though not in specific terms. The voluntary activities of these two of the Morris' staff, as well as contracts for consultation taken on by the Morris and supervised by these individuals, affirm the commitment.

Dr. Rhoads is Director of Botany at the Morris Arboretum. She was member of the Lower Makefield (Bucks County) Park and Recreation Board from 1979-85; she is presently a member of the Bucks County Planning Commission. Both positions are, by definition, voluntary and Dr. Rhoads, acting as a private citizen, brings to that post a vast background in botany, field ecology, and natural resources.

Mr. Meyer is Director of Horticulture and a member of the Springfield Township (Montgomery County) Planning Commission. As the Bloomfield Farm property of the Morris lies just outside the Philadelphia city line in Springfield Township, the Morris Arboretum is a neighbor and a part of the local scene. Mr. Meyer's appointment as Planning Commissioner is voluntary and, though he certainly represents the Morris Arboretum, his status on the Commission is that of a private citizen.

Mr. Meyer has also authored, and collaborated on, a number of articles for professional and trade publications, presenting common-sense suggestions and alternatives for urban and suburban design and planting practices. The articles are based on experience and research from projects both on and off the Arboretum property. An example of such work can be found in the Fall 1985 issue of *Agora*, where Mr. Meyer collaborated on articles offering alternative techniques for street tree planting and design.

Additionally, there have been a number of contracts undertaken by the Morris Arboretum that have placed its name and its staff in forums for public policy dialogue. Those projects have included the rare and endangered plant survey for eastern Pennsylvania (part of the Pennsylvania Natural Diversity Inventory); a 1983 vegetational inventory for the master planning effort for Fairmount Park in Philadelphia; urban tree management consultation for Independence National Historical Park, and plant surveys on the Upper Delaware River for the United States National Park Service; a 1980 study that described techniques for managing detention basins⁹ (for the Supervisors of Lower Makefield Township. Unlike other situations discussed thus far in this chapter, most of these projects were actual paid professional consultations.

A symposium entitled "Landscaping in the Suburban Business District" was offered by the Morris Arboretum in 1983. The symposium explored issues of landscape regulation, etc. and promoted appropriate

horticultural practices. The audience consisted largely of zoning officers, street tree committee members, and planning commissioners.

In the case of the voluntary appointments held by Dr. Rhoads and Mr. Meyer, endorsement comes from the institution in a number of forms. The academic ties and traditions of the organization ensure philosophical support for sharing knowledge. These two individuals each have the freedom to conduct Commission or Board business during the work day at their discretion. As is so often the case the normal work day goes well beyond eight hours anyway. Other support for the contract work comes in the form of clerical and intern help.

The cost to the Morris Arboretum for these activities varies according to type: planning commission-related work, education programs, or paid contracts. The costs for the planning commission work seem to be incidental, with the exception of intern help used occasionally for that purpose by Mr. Meyer; costs for the contract work and educational programs include staff and intern time, printing costs for fliers and reports, clerical time, and supplies. Every effort is made to keep the contract and educational work in the black.

Benefits are varied. Activities such as those described give additional meaning and substance to internship experiences. Workshops and paid consultations provide income that helps to offset some of the expenses. The research projects provide opportunities for staff members to try and test ideas on sites beyond the Arboretum. The activities have public relations value,

generating good will toward the institution. The visibility that the organization achieves in its participation in important public policy dialogues further contributes to its leadership stance. Finally, such activities broaden the Arboretum's audience and help to fulfill institutional goals of public service and leadership.

Would the Morris Arboretum continue in this direction in the absence of Paul Meyer and Ann Rhoads? Probably. Although their appointed community posts cannot be written into a future job description, the organizational goals of service and leadership do prevail and are encouraged by the governance.

Arnold Arboretum

The Arnold Arboretum is in Jamaica Plain, Massachusetts, near Boston. Its affiliation with Harvard University, its position on Boston's Olmstead-inspired "Emerald Necklace," and its support of early 20th century plant explorers indicate its rich traditions in scholarship and social consciousness. Gary Koller is the Managing Horticulturist at the Arnold and has spearheaded a number of efforts to raise the public policy consciousness with regard to built landscapes. The fall 1984 issue of *Arnoldia*, entitled "Urban Islands: Trees and Shrubs for the Inner City" is a fine example of the Arnold Arboretum's commitment to getting needed information out to those who can use it. Mr. Koller also does street tree consulting for public and private projects around Boston. Another staff member, Peter Del Tredici, represents the Arnold Arboretum in gardening and open space projects around Boston.

Longwood Program

The project that stands out, and truly indicates the Arnold Arboretum's leadership posture, is its support and encouragement of the Massachusetts Green Industry Council. The Council was formed in 1985, with the thinking that problems shared by a variety of professions in the landscape industry should be confronted by those professions as a group working together. The founding associations include the Massachusetts Nurseryman's Association, the Associated Landscape Contractors of Massachusetts, the Boston Society of Landscape Architects, and the Massachusetts Arborists Association. The Council was later joined by the local public horticulture and turf professionals. The Arnold Arboretum, represented by Mr. Koller, provides meeting facilities and related support.

The goals of the Green Industry Council include fostering better communication among the professions, and combining forces for more effective lobbying. It also provides a clearinghouse for professional information, and provides general education about care of the landscape . . . stressing the necessity budgeting funds for maintenance for the life of a project.¹⁰

What does all of this have to do with landscape specifications in zoning ordinances? In adopting the publication, *Lawn and Planting Specifications*, the Green Industry Council has set out standards for planting, agreed-upon by representatives of the four major landscape professions in the Boston area. These specifications promote and update sound practices at an interdisciplinary level and can only contribute to the effectiveness of any

landscape requirements already in place in local ordinances. Boston-area ordinance writers would do well to cite these specifications in the ordinances as they are revised.

Green Industry Council founders stress that the support, and early endorsement, provided by the Arnold Arboretum in the early stages was extremely crucial. They also cite Mr. Koller's support, enthusiasm, and contributions to the *Manual*, as instrumental.

Mr. Koller describes the endorsement from the governance of the Arnold Arboretum as somewhat guarded. While a number of audiences are served by the Arnold, and professional groups certainly rank highly, organizational resources are spread quite thin. The costs to the Arnold Arboretum for the activities described include staff time, meeting space, and related supplies. The benefits to the organization include the benefits derived from the activities of the Green Industry Council (lobbying, expanded power base from joining ranks, etc.). Additional professional contact is generated due to the collaborative nature of the Green Industry Council activities. Benefits to the community include a neutral meeting place for the Council and general agreement on standards for the work done by landscape industry members.

Would these activities be dropped by the Arnold Arboretum in the absence of Gary Koller or Peter Del Tredici? Not likely. There is a growing awareness that the Arnold is important common ground for a number of professional audiences. Mr. Koller suggests, however, that particular consulting

activities that he has taken on out of his own interest would probably not continue in his absence. All things considered, there appears to be solid organizational support for activities such as the Council.

There appears to be a general pattern in these examples of individuals taking on, or becoming involved in, public policy projects on their own initiative and offering their professional talents for local programs. They perform the the work largely as representatives of their organizations, though often on a voluntary basis. Most have some sort of organizational support, sometimes express, often implied, for their activities. Some are currently campaigning for further organizational support. In all cases, the local government or planning body approached the individual or organization, seeking advisement. This will become an important issue in introducing new programs.

Suggestions for Programming

The preceeding descriptions have shown a number of ways in which the knowledge held by horticulture organizations is being put to use in the community. A vast range of possibilities is available to organizations that see this sort of outreach as part of their mission.

Recognition as a presence or a resource in community policy decisions is not always immediate, or even apparent. Rarely does it "just happen"; it must be planned, tested, and evaluated, as with any other pilot program. The

suggestions that follow give programming ideas that could be tried singularly, or combined in some way, depending on various conditions in the organization and needs in the community. These are discussed under the general headings of staff appointments, education, technical assistance, and clearinghouse activities.

Appointments to Public Posts

Is it necessary for staff members to commit personal time to issues of public policy in order for an organization to have a presence? Programs at Transition Zone Horticultural Institute and the Arnold Arboretum indicate that personal volunteerism is not always necessary, nor is it always possible. The very fact that most planning advisory body posts are voluntary appointments, with nominations coming from local officials, precludes the writing of such activity into a job description. The commitment required under such circumstances comes only from within and cannot be formalized in that sense.

Such appointments, however, have been instrumental in introducing local planning authorities and community leaders to the resources available through local organizations. The Springfield Township Commissioners knew that Mr. Paul Meyer, then Curator of the Living Collections at the Morris Arboretum, would be an effective resource for horticultural information. What they likely did not know was the support structure and resource base that would be available to them through Mr. Meyer.

Educational Programs

Through workshops, seminars, and other similar arrangements, public horticulture organizations can provide needed technical information, a forum for exchange of ideas, or just some common ground. Audiences for such offerings might include planning commissioners, zoning board members, zoning officers, members of street tree committees, developers, landscape contractors, or horticulture professionals. Developers and landscape contractors may be interested in appropriate landscape plants for the area, new or alternative design options, and the acceptability of either under local regulations. Planning commissioners and zoning board members may also be interested in such a workshop or class. Imagine creating an opportunity for these individuals to explore such issues together. Additionally, appointed officials may be interested in sources for state-of-the-art regulatory language, pros and cons of particular kinds of regulations, or workshop interaction with a horticulturist or planner/landscape architect. The possibilities are legion.

Public horticulture organizations can do much in promoting practices that will help plantings to live and thrive. This includes sound planting, bed preparation, and maintenance practices. Such technical considerations can and should be incorporated into regulations and observed by practitioners.

Planning and conservation agencies and associations are the traditional purveyors of zoning and public policy workshops. Although landscape regulations are rarely their main focus, the experience of these organizations should certainly be sought in the planning of such workshops. Appendix E

lists, and briefly describes, a number of organizations concerned with planning, community landscape, community character, or conservation and related professional or technical education.

Examples of workshops and seminars were given in the sections dealing with the Morris Arboretum and the New England Wildflower Society. Staff at those organizations are very willing to share their experience and observations with other professionals considering similar projects.

Sample landscapes or plantings are another way in which public horticulture organizations can convey information related to landscape regulation. On or off their own grounds, gardens or arboreta can present plantings that showcase plants and technical practices useful under local conditions and within the regulations. Variations in parking lot design, buffering, or screening are also rife with possibilities for this sort of approach. Opportunity exists, as well, for such plantings to be done in cooperation with a local planning agency or local planning/design professionals. Additional impact is achieved when such plantings are visible . . . out in the community and shown functioning in commonplace situations. It is important that such projects be selected for their value as models. Christopher Wright makes this suggestion in his Columbia University/Holden Arboretum study, *The Prospective Role of an Arboretum*:

Displays might relate to such local phenomena as parking lots, shopping centers, industrial developments, highway verges, and back yards.¹¹

Technical Assistance

Technical assistance activities could have a variety of audiences. The main emphasis for this discussion is on the local planning body. If technical assistance to the planning body is apt, then many audiences (developers, contractors, site designers) benefit. For instance, if a carefully researched, locally developed plant list is either adopted, or simply promoted, by the local government, developers benefit by having that information available to them in the planning stages of a project. This reduces surprises and guesswork for all involved.

Technical assistance programming should also emphasize planting, design, and maintenance practices that will help plantings to thrive and succeed. Therefore, a possible role for public horticulture organizations is assistance in writing specifications with such a goal in mind.

Arboretum and botanic garden professionals can provide a major service by tailoring a plant list for use with local landscape regulations. There are very few public horticulture organizations that don't study plants under local conditions . . . and even fewer professionals who don't observe such phenomena informally. This is to say that one activity, already performed by most organizations, generates information that is urgently needed by local governments. Incomplete, poorly-advised plant lists are practically the norm in community landscape regulations; with very little additional work, many public horticulture organizations could help to get these lists on the right track.

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Other ways in which technical assistance can be provided include design or plant selection review and similar *ad hoc* functions. This recommendation, however, comes with a number of cautions. Design or plant selection review could be politically tricky. Here we have a horticulture professional assessing the work of another professional . . . possibly a site designer or landscape architect. If that horticulturist is a member of the Planning Commission, there is little problem so long as that individual can communicate effectively and offer recommendations in a constructive manner. Remember that the entire commission is seated with professionals, all donating their talents to the community in the same manner. If the horticulturist is unpaid and representing the local garden/arboretum, questions may be raised regarding the privilege of a non-profit to do "business" that would otherwise go, with pay, to a commercial firm. Situations will vary; organizations and their staff will answer many of those questions from the start by simply possessing a strong sense of what it is that qualifies them to become involved in this process.

Organizations need to proceed cautiously in public technical assistance ventures. Interest conflicts should be avoided, but this is not to suggest that controversy should be shunned. Even the most sensible advice may sometimes require a degree of salesmanship or advocacy. It is extremely important that organizations retain their impartial demeanor and independent action, especially when advising on public policy. Organizations considering public policy activities need to think them through carefully in light of organizational

goals and objectives. The decision to proceed should always be backed by resolve, commitment, and possibly a touch of bravado.

An additional caution regarding *ad hoc* activities in technical assistance is that they can become real time sinks for staff. Staff members should account for time spent on such activities; possibly time limits (maybe in hours per week) might be agreed upon by both parties. Of course, charging fees is an effective method for encouraging clients to make wise use of staff time; this also helps to regularize and solidify the role of the organization.

Clearinghouse Activities

There are a number of ways in which public horticulture organizations can provide informational services to local governments. Maintaining a speakers bureau of horticulturists or other landscape professionals qualified to address local regulation issues is a fairly inexpensive way to do that. Also, a particular staff member or department might collect, and distribute on request, information about model ordinances or existing ordinances that merit consideration.

Finally, the organization as a whole needs to be promoting appropriate horticultural practices at the general community level. Awareness of standards, such as the AAN Standards for Nursery Stock, should be encouraged. The more that this is done, the more likely it is that public officials, and constituents, will come to appreciate and demand sound horticultural practices. Regulated plantings are more likely to succeed in such a climate.

Issues To Consider

A degree of organizational soul-searching must take place before an organization steps into the public arena, offering any of the types of assistance described here. Commitment for such activities must come from the leadership of the organization . . . from its governance, from its directors, from its key staff. If that commitment is not supported by the express purposes of the organization, justification and rationale must be developed.

Additionally, the organization needs to confirm its position on a number of potentially controversial issues. If a garden or arboretum enters into public dialogue on topics concerning landscape regulations and community aesthetics, certain issues are inevitable. It is important that these be anticipated and that the leadership and staff can articulate the organization's philosophy. For instance, should landscape regulations call for native plants to the exclusion of exotics? Or exotics to the exclusion of natives? What is a native plant? Are naturalized plants from elsewhere on the continent considered exotic? Is there a balance to be struck in publicly regulated plantings? Where does the organization stand on these issues?

Is there a sense of place, a local character, or particular aesthetic in the area? Can it be defined? Should it be protected? Should it be enhanced to the exclusion of other aesthetic values? What does this mean in terms of vegetation? Is there an indigenous landscape aesthetic that should be

encouraged through the regulations? How can this be articulated? Does it have meaning in terms of health, safety, and welfare?

Finally, most horticulturists understand the risks involved in the planting of monocultures. Nonetheless, species diversity in most developed areas is remarkable low. Should there be commitment to promoting species diversity through public means? How is this accomplished? How is this explained to a governing body member concerned with the municipal budget?

Several other aspects of the organization's general condition need to be assessed; the first is timing. There may be deeply-felt commitment to public involvement among organizational leadership, but is the time right? If a master planning process exists, possibly such activities might be worked in through the planning process.

Funding should also be considered. Whether or not a fee is charged for the proposed services, there will certainly be start-up costs. Is there a source for start-up funds? Shall fees be charged for technical assistance? Shall fees be charged for educational programming? Institutional philosophies, purposes, and finances will probably lead to some answers.

How shall the organization introduce its programs to the community? Organizations should consider the advice of Peters and Waterman in their book, *In Search of Excellence*: stay close to the clients . . . explore their needs with them before developing the product.¹² Remember that every example given

earlier in this chapter had the local government approaching the public horticulture professional or organization for help or advice. This may not always be the ideal arrangement. The decision of whether to adopt a posture of "response" or a posture of fairly aggressive activity will be an important one.

Also, public activity inevitably involves the possibility of conflict or adversarial situations. An organization needs to decide on the contraversies in which to participate . . . even the ones to stir up, and prethink the implications. Public horticulture organizations (indeed, most organizations) should consider the risks and dare to engage in debate and controversy. To sit behind the garden walls in flowery magnificence means to be serving only self and a privileged few. An insular attitude does little for an organization's effectiveness in the public sector.

Finally, programming decisions must be made. What sorts of programs are best assembled by the organization? Are there programs of a similar ilk being offered locally? Is there opportunity for collaboration? What sorts of programs can be planned for the future? What local needs have been identified? Comments from Christopher Wright's study provide some insight:

The focus on formulating criteria for land management in terms of the biological potential of woody plants should help an arboretum integrate its display, educational, research, and service programs. Its emphasis on local conditions should provide its undertakings with limits, as will its amount and type of land, and its physical and financial resources . . . In a sense, an arboretum should function as an environmental awareness center with a special concern for land management and the role of trees and shrubs in the civilized landscape.¹³

CHAPTER IV NOTES

¹ Frank Beal, *Private Planning for the Public Interest: A Study of Approaches to Urban Problem-Solving by Nonprofit Organizations* (Chicago: American Society of Planning Officials, 1975), p. 1.

² Beal, p. 91.

³ Christopher Wright, Editor, *The Prospective Role of an Arboretum* (Mentor, OH: The Holden Arboretum and the Columbia University Institute for the Study of Science in Human Affairs, 1972), p. 7.

⁴ Wright, p. 14.

⁵ Wright, p. 32.

⁶ 4 March 1985 interview with Ron Fleming.

⁷ Beal, p. 1.

⁸ 12 February 1985 letter to author from Charlotte Minor of Transition Zone Horticultural Institute.

⁹ Ann F. Rhoads, Paul W. Meyer, and Paul Sell, *A Landscape Strategy for Detention Basins* (Philadelphia: Morris Arboretum of the University of Pennsylvania, 1980).

¹⁰ Memo dated 12 June 1985 on letterhead from Brown and Rowe, Landscape Architects and Planners, Boston, MA.

¹¹ Christopher Wright, *The Propsective Role of an Arboretum* (Mentor, OH: The Holden Arboretum, 1972), p. 15.

¹² Thomas J. Peters and Robert H. Waterman, Jr., *In Search of Excellence* (New York: Harper and Row, Publishers, Inc., 1982), pp. 156-199.

¹³ Wright, p. 13.

¹⁴ Wright, p. 38.

CHAPTER V:

CONCLUSIONS AND CONSIDERATIONS

This study has shown that a number of problems trouble the local regulation of built landscapes. Although the case studies revealed that these problems can vary, even among neighboring communities, some basic patterns were discernible. They are summarized in the following sections.

Regulatory Objectives

Objectives for landscape regulation rarely address the total landscape. Of the case study townships, two provided objectives for parking lot and buffer plantings while the other provided objectives for parking lot plantings only. Objectives are not given for other elements in the landscape that are regulated.

The objectives themselves are frequently weak in providing direction. Coloring the development of most objectives is the concern that items not readily framed in terms of health, safety, and welfare may not be defensible in

courts of law. This concern has not been unfounded; land-use decisions based purely on aesthetic concerns have not held up well when challenged.¹

What many local governments have yet to recognize and express is the value of vegetation beyond its amenity uses and, more important, that design for aesthetics and design for function are inextricably linked. What often results is regulatory language that veils aesthetic concerns with the more defensible functional jargon.

Moreover, objectives are often unclear in that vague and general terms such as "natural environment," "natural amenities," and "residential character" are not defined specifically in terms of what they are in that community. Clarity also suffers because of questionable grammar.

Regulations

The case studies revealed sites where the terms of the regulations were fully satisfied but the objectives given for those regulations were not. This indicates some failure in the regulations: either the writing has been done with little regard for the objectives or the regulations were written to serve some other objective entirely.

Design Standards

The regulations of all three case study townships indicated the dilemma of flexibility *versus* preceived control. While Concord Township exercised little or no flexibility, Radnor Township permitted flexibility within the guidelines of performance standards, and Springfield Township permitted flexibility and guided it with the help of one of its Planning Commissioners, horticulturist Paul Meyer.

Study of design standards revealed that strict control can be somewhat illusory in that it can severely restrict design solutions and thus severely limit the ways in which community objectives can be achieved. Regulating the conscientious and the not-so-conscientious in the same set of regulations is not an easy task. The communities that accept the challenge, however, are frequently rewarded by favorable results.

Plant Lists

Of the three case study townships, one had no lists, one had one list, and one had multiple lists, each with multiple options. It was found that no list is better than one that is inadequately researched or overly restrictive. Well-researched lists are very effective; multiple options certainly widen the possibilities for design solutions. Confidence in that flexibility is encouraged by the availability of professional advice. Therefore, an ideal arrangement might include regulations with excellent plant information, a degree of flexibility, and a specialist available who has the skill and knowledge to confidently support that flexibility.

Planting Standards

Technical standards for the installation and maintenance of landscape plantings were largely absent from the regulations examined in the case studies. Considerations for planting technique, soil and site preparation, and basic care - vital for plant survival in the built environment - are given little attention in the regulations and in the resulting landscapes.

Horticultural Expertise

The case studies have shown that there is clearly a need for technical assistance in the horticultural aspects of landscape regulation. The situations in which horticulturally expert advice was used, either within the regulations or through an individual, produced superior results. The case studies indicated that an ideal situation might include regulations that are performance-oriented and technically correct in their plant and planting standards, along with the available counsel of someone professionally qualified to review site plans and to field alternative proposals.

Recommendations: A Call to Action

There is a serious need for technical guidance in local landscape regulation and in the development of related policy. Investigation of public horticulture activities indicates that this is one area of need that has gone largely untouched and unrecognized by horticultural outreach and other public

programs. The potential for public horticulture involvement in solving local problems of landscape regulation is great; such concern is certainly within the purposes of many public horticulture organizations.

Assistance can take many forms, including sample plantings in the community, or educational programs for community leaders, planners, developers, property owners; technical assistance to local governments guiding plant selection, site plan review, sound planting and design practices; the professional presence of horticulturists on advisory or planning committees.

Projects and assistance ventures should be chosen for their potential to instruct, provide models, or influence policy, i.e., a multiplier effect should be sought.

Considerations

Certainly no single effort can change public attitudes, or public inertia, quickly. However, public horticulture professionals and organizations are highly visible. Through programs and example, they have a distinct influence on attitudes about vegetation and (albeit indirectly at times) the land that supports it. The public horticulture profession can do much to advocate certain ethics, ideals, and attitudes regarding indigenous and built landscapes. We may need to examine some of our own thoughts and assumptions, however, before we can presume to actively influence those of others.

Longwood Program

For example, plantings are frequently discussed and regarded strictly in terms of ornament. As professionals, we may understand the utility of green landscapes better than most; but that utility is so seldom expressed in the terms of our daily work and conversation. How regularly do we discuss "landscaping" as if it constitutes some sort of veneer, rolled on once the construction is complete? Moreover, how often do we allow the expression and manifestation of such attitudes to go unchallenged?

John O. Simonds reflects this sentiment with regard to highway design in writing,

The best way to "landscape" a highway is not to decorate it with horticultural parsley, but rather to locate and design it so as to preserve, and provide views to, the natural features of the landscape through which it moves. Beauty is seldom achieved by the application of ornament. It is, rather, a quality perceived when all the components are compatible and expressive. The most beautiful highways are usually those distinguished by restraint and utmost simplicity in design.²

Simonds' is one illustration of how, in the area of landscape design, professionals such as horticulturists and landscape architects set very visible examples. We need to carefully consider the messages that our practices convey to the public.

Once we have examined our own thinking and the examples that we set for others, we need to consider the ways in which we actually educate others and promote attitudes. Dialogue with other horticulture professionals and laypeople, as well as with members of the public, should be encouraged.

Talk of interdisciplinary approaches to problems seems almost cliché' in 1986, but the practice seems to be sporadic. The total landscape cannot be permitted to slide through the cracks of isolated professionalism. This author suggests that we advocate and nurture collaborative works; that we advocate attitudes that regard the natural world as serving purposes beyond recreation; that we advocate sensible land use and a stewardship ethic . . . beginning with our own examples.

Christopher Wright suggests, as a self-described disinterested observer, that attention to the communities that our organizations call home is part of our responsibility . . . that we should turn our attention outward.

Most arboreta and botanical gardens regard their displays as in some sense carefully cultivated sanctuaries from the world outside the arboretum. The arboretum directs its attention inward and takes the position of being a custodian of a unique garden. The alternative point of view is for an arboretum to regard the whole surrounding landscape as in a sense its garden and to advocate its active management.³

The two views described here by Mr. Wright need not be mutually exclusive. Many public horticulture organizations certainly are stewards of unique landscapes that should be cared for and presented in a thoughtful way. The larger indigenous landscape needs and demands our attention as well. Public horticulture organizations that do not influence their larger environment in a positive way are very likely neglecting an important responsibility.

A garden or arboretum that occupies any amount of land has an ethical responsibility to manage its own land in an exemplary manner . . . whether or not its charter says anything explicit about civic responsibility. Such stewardship can convey more meaning, information, and spirit than many formal programs. Example can be most effective and most telling, but it may not be enough. Each garden or arboretum, as an organization, can contribute in some way to the larger community landscape that surrounds it. Meaningful arrangements would differ with each organization, community, and that community's sense of itself. That variability, the dynamics of organization and community fabric, is one prospect that makes this such a viable and exciting opportunity for public horticulture.

CHAPTER V NOTES

¹ Michael J. Meshenberg, *The Language of Zoning* (Chicago: American Society of Planning Officials, 1976), p. 3. See also *Sackson v. Zimmerman*, Supreme Court of New York, Appellate Division, 1984.

² John Ormsbee Simonds, *Earthscape: A Manual of Environmental Planning* (New York: McGraw-Hill Book Co., 1978), pp. 56, 149.

³ Christopher Wright, *The Prospective Role of an Arboretum* (Mentor, OH: The Holden Arboretum, 1972), p. 15.

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CASE STUDY QUESTIONS

APPENDIX A

TOWNSHIP MANAGER INTERVIEW

Township Manager:

Date of Interview:

Date current regulations effective:

Subdivision/Land Development:

Zoning:

How are proposed designs/plants reviewed?

Are there individuals on your planning commission or zoning hearing board who are professionally qualified to review landscape plans?

If not, are there other individuals upon whom you rely for professional advice in routine landscape matters?

How are design/plant standards enforced?

Can you detect a difference between sites developed before/after adoption of landscape regulations?

Do you ever negotiate with a developer for something other than that which the regulations specify?

Is the result better or worse for this?

Do you have any criticism for the current regulatory language as it pertains to plants/plantings?

Professional affiliations/inclinations of those who wrote, or assisted in writing, the landscape regulations in your township?

REGULATORY LANGUAGE

Purpose for required landscape plantings:

Locations on a site where landscape plantings may be required:

Do regulations encourage or require conservation of existing trees on a development site?

Do regulations specify removal of construction rubble/debris, or any other site/soil preparation measures, before planting?

Do regulations give a plant list?

If yes, how appropriate and how restrictive?

Do regulations give planting or nursery stock specifications?

Any mention of aesthetics in regulatory language?

Do regulations require maintenance of plantings?

SITE INFORMATION

Site:

Zoned:

Applicable zoning language:

Applicable subdivision/land development language:

Purpose given in regulations for landscape planting(s) on site:

Degree of compliance with township regulations:

Are plantings effective in achieving purposes stated in regulations?

Are species used appropriate for site conditions?

Is design of a durable nature?

Are plants alive and thriving?

Level at which plantings are maintained?

Is maintenance required in regulations?

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

SHRUBS:

TREES:

COMMENTS:

APPENDIX B

CONCORD TOWNSHIP CASE STUDY

TOWNSHIP MANAGER INTERVIEW

Township Manager: *Jack Cornell*

Date of Interview: *October 18, 1985*

Date current regulations effective:

Subdivision/Land Development: *1969*

Zoning: *landscape regulations adopted over a number of years*

How are proposed designs/plants reviewed?

By Planning Commission.

Are there individuals on your Planning Commission or Zoning hearing board who are professionally qualified to review landscape plans?

No.

If not, are there other individuals upon whom you rely for professional advice in landscape matters?

Yes, sometimes the Township engages a landscape architect/planning consultant.

It's worth the additional cost when you have confidence in that person's ability to do a professional job.

How are design/plant standards enforced?

No instrument for enforcement beyond the initial review procedures.

Can you detect a difference between sites developed before/after adoption of landscape regulations?

Yes. Great improvement.

Do you ever negotiate with a developer for something other than that which the regulations specify?

No.

Is the result better or worse for this?

*Better. By adhering strictly to the regulations,
we're sure to be treating everyone the same.*

Do you have any criticism for the current regulatory language as it pertains to plants/plantings?

No.

Professional affiliations/inclinations of those who wrote, or assisted in writing, the landscape regulations in your township?

Regulations were compiled from in-house (Planning Commission) recommendations and borrowed and model regulations.

REGULATORY LANGUAGE

Purpose for required landscape plantings:

For parking areas: to ensure good appearance of vehicular parking areas and to protect and preserve the character, appearance, and value of surrounding neighborhoods, thereby promoting the general welfare by providing for the installation and maintenance of landscaping for screening and aesthetic qualities, since the Board of Supervisors finds that the peculiar characteristics and qualities of Concord Township justify regulations to perpetuate its aesthetic appeal on a township-wide basis.

Locations on a site where landscape plantings may be required:

along property lines fronting less intensive land uses, open space, off street parking, street trees

Do regulations encourage or require conservation of existing trees on a development site?

Subdivision regulations suggest to do so where possible; existing woodlands should be used to best advantage in buffering.

Do regulations specify removal of construction rubble/debris, or any other site/soil preparation measures, before planting?

No.

Do regulations give a plant list?

Yes, for street trees.

If yes, how appropriate and how restrictive?

Severely limited (seven species); some species problematic. Township Manager has no negotiating power in this area; must require a developer to use only the species stated in Subdivision/Land Development regulations.

Do regulations give planting or nursery stock specifications?

No.

Any mention of aesthetics in regulatory language?

Yes. "To insure good appearance."

Do regulations require maintenance of plantings?

Buffers to be "permanently maintained."

SITE INFORMATION

Site: *Pulsations Night Club*

Zoned: *C2: Planned Business and Commercial*

Applicable zoning language:

Section 2103C - landscape requirements for

front and rear building setback area

ection 2104D - general landscaping

Section 5002 - specifications for 2104A

Section 5108 - parking lot landscaping and buffering

Applicable subdivision/land development language:

Section 415 - preservation of resources

Purpose given in regulations for landscape planting(s) on site:

Promote good appearance, character, and value of

properties in township.

Degree of compliance with township regulations:

Site appears to be in compliance except that planted proportion of parking lot

seems to be less than 10%.

Are plantings effective in achieving purposes stated in regulations?

*No. They do little to promote good appearance,
character, or value of properties.*

Are species used appropriate for site conditions?

*Yes, except for poplars, and silver and norway maples,
which are problematic.*

Is design of a durable nature?

*No. Parking lot plantings are not protected
from damage by autos. Many species used
are short-lived.*

Are plants alive and thriving?

*No. Massive scale infestations on norway
maples. Some dead and dying trees. Grade
changes are questionable in terms of possible
harmful effect on trees.*

Level at which plantings are maintained?

Low. Little or no attention given to care of landscape plantings.

Is maintenance required in regulations?

Yes, in terms of buffers being "permanently maintained."

PLANT LISTS AND COMMENTSHERBACEOUS AND GROUND COVER PLANTS:

Euonymus fortunei

turf

SHRUBS:

Cotoneaster apiculatus

Juniperus horizontalis

J. scopulorum

Yucca filamentosa

TREES:

Acer platanoides (existing)

A. platanoides (red cultivar)

A. rubrum

A. saccharinum (existing)

Betula papyrifera

Picea abies

P. pungens

Populus sp. (existing)

Tilia cordata

COMMENTS:

*-Developer saved existing poplars and silver and
norway maples.*

*-Developer kept existing poplars under power
line and added more maples and lindens
under same line.*

*-Parking lot a vast expanse of asphalt with a
few trees. Those trees are silver maples
that have undergone a grade change and
stand currently unprotected from autos.
Lot slopes down to retention basin.*

*-Appearance of site in daylight seems to have
not been considered in the site design.*

SITE INFORMATION

Site: *Town and Country Furniture*

Zoned: *C2: Planned Business and Commercial*

Applicable zoning language:

*Section 2103C1 - landscape requirements for front
and rear building setback areas*

Section 2104D - general landscaping

*Section 5108 - parking lot landscaping and
buffering*

Applicable subdivision/land development language:

Section 415 - preservation of natural resources

Purpose given in regulations for landscape planting(s) on site: *Promote good
appearance, character, and value of properties in township.*

Degree of compliance with township regulations:

High. Standards exceeded.

Are plantings effective in achieving purposes stated in regulations?

Yes.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Plants pruned, turf mowed, litter and debris removed.

Is maintenance required in regulations?

Yes, in terms of "permanently maintained."

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf (expansive)

SHRUBS:

extensive foundation planting

TREES:

Acer rubrum

Castanea mollissima

Cedrus atlantica 'Glaucua'

Pinus nigra

Quercus palustris

Q. phellos

Q. rubra (existing)

Tilia cordata

COMMENTS:

-detention basins nicely done

-earth mounding around interior roadways work well

-grade change for existing trees questionable

*Longwood Program***SITE INFORMATION**

Site: *Westinghouse*

Zoned: *LI: Light Industrial*

Applicable zoning language:

Section 3006B - general landscaping

Section 5002 - screening and buffering along

property line adjoining residential zoning districts

Section 5108 - parking lot landscaping

Applicable subdivision/land development language:

Section 415 - protection of resources

Purpose given in regulations for landscape planting(s) on site:

Promote good appearance, character, and value of properties in township.

Degree of compliance with township regulations:

High. Plantings exceed standards.

Are plantings effective in achieving purposes stated in regulations?

Yes.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

Moderate. Plants cared for but not fussed over.

Is maintenance required in reguations?

Yes, in terms of "permanently maintained" buffers.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

Pachysandra terminalis

SHRUBS:

Euonymus alatus

Philadelphus coronarius

Pinus mugo

Rhododendron catawbiense

Rhododendron sp. (Azaleas)

TREES:

Carya sp. (existing)

Fraxinus americana cv.

Prunus serotina (existing)

Prunus subhirtella

COMMENTS:

-former nursery site; therefore many existing plants and nursery blocks

-buildings appear to be carved out of wooded areas

-site wild and overgrown, but fits in nicely with wooded hillside.

SITE INFORMATION

Site: *State Farm*

Zoned: *PLO: Planned Laboratory-Office*

Applicable zoning language:

Section 3206.C - general landscaping

Section 5108 - parking lot landscaping and buffering

Applicable subdivision/land development language:

Section 415 - preservation of resources

Section 508 - street trees

Purpose given in regulations for landscape planting(s) on site: *To promote good appearance, character, and value of properties in township.*

Degree of compliance with township regulations:

High. No violations noted.

Are plantings effective in achieving purposes stated in regulations?

Yes, although judgement is difficult with plantings less than one year old.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Moderately. Some species (particular evergreens) are dead or dying.

Level at which plantings are maintained?

Moderate. Litter and debris removed; some plants look unhealthy.

Is maintenance required in regulations?

Yes, only in terms of "permanently maintained" buffers.

PLANT LISTS AND COMMENTS:

HERBACEOUS AND GROUND COVER PLANTS:

turf

Juniperus horizontalis

Juniperus procumbens

SHRUBS:

Chamaecyparis pisifera

Euonymus alatus

Pinus mugo

Taxus x media

Rhododendron sp. (Azaleas)

TREES:

Acer rubrum (existing)

A. saccharum (existing)

Cedrus atlantica 'Glaucua'

Cornus florida

Fagus grandifolia

Fagus grandifolia (weeping cultivar)

Liquidambar styraciflua

Malus sargentii

Malus sp. (existing)

Picea abies

Pinus strobus (existing and planted)

Platanus occidentalis (existing)

Prunus subhirtella 'Pendula'

Pyrus calleryana

Quercus rubra (existing)

Thuja occidentalis

Tsuga canadensis

COMMENTS:

-some existing woodland

*-berms and mounds facing Routes 1 and 202 work well in deflecting noise and
commotion from a very busy intersection*

CONCORD TOWNSHIP ZONING REGULATIONS

1. Article 21 C2: Planned Business and Commercial
(Pulsations and Town and Country Furniture)
2. Article 30 LI: Light Industry
(Westinghouse)
3. Article 32 PLO: Planned Laboratory-Office
(State Farm Insurance)
4. Article 50 General Landscaping
5. Section 5108 Landscaping for Off-Street Parking

ARTICLE 21

C-2 PLANNED BUSINESS AND
COMMERCIAL DISTRICT

2101. PURPOSE

Planned Business and Commercial Districts provide for appropriate development and special requirements designed to offer Township-wide and regional services.

Among other things, the district regulations: (1) require that the district be developed as a group or groups of properly related business and compatible facilities comprising a single architectural scheme with appropriate landscaping, and (2) contain a comprehensive set of design requirements governing access, land use, building placement, building coverage, highway protection, off-street parking, buffering and screening.

2102. USE REGULATIONS

A building or a unified group of buildings may be erected or used and a lot may be used or occupied for any of the following purposes and no other:

A. Uses by Right

1. A planned shopping center, including the following uses as part of an integrated retail development:
 - a. Retail store, including department store, variety store, furniture store, specialty shop or any other retail store or shop designed primarily to serve an area larger than the immediately surrounding neighborhood.
 - b. Retail service or personal service shop, provided that the provisions of subsection 2002.A.2 are complied with.
 - c. Office, studio, or office building.
 - d. Bank or financial institution.
 - e. Utility office.

Longwood Program

SECTION 2102. (Cont'd.)

- f. Emergency service facility.
 - g. Any use of the same general character as any of the above permitted uses provided that such use shall be permitted subject to such reasonable restrictions as the Township may prescribe, and further provided that no use shall be permitted which is objectionable as defined in Section 6103.
 - h. Vehicle parking lot as accessory use to the permitted commercial uses.
 - i. Accessory use on the same lot with and customarily incidental to any of the above permitted uses, which use may include (a) storage within a completely enclosed building in conjunction with a permitted use; (b) living accommodations for the proprietor of a store or business establishment, or for a watchman or caretaker or similar employee, provided that no such dwelling accommodation shall be located on the first floor; and (c) signs as permitted in Article 52.
- B. Conditional Uses - subject to provisions of Section 6301 and 6302.
- 1. Restaurant
 - 2. Indoor place of amusement or recreation including theater or bowling alley.
 - 3. Commercial education or instruction.
 - 4. Health center.
 - 5. Health spa or physical fitness club.
 - 6. Community center.
 - 7. Motor vehicle accessories store, not including sale of motor fuel.

SECTION 2102. (Cont'd.)

8. Hotel, motel, or inn, provided such use is designed so as to constitute a logical and harmonious element of the overall development plan for the particular district location.
9. Bus or railway station.
10. Vehicle parking lot as accessory use to the permitted commercial uses.
11. Accessory use on the same lot with and customarily incidental to any of the above permitted uses, which use may include (a) storage within a completely enclosed building in conjunction with a permitted use; (b) living accommodations for the proprietor of a store or business establishment, or for a watchman or caretaker or similar employee, provided that no such dwelling accommodation shall be located on the first floor; and (c) signs as permitted in Article 52.

2103.

YARD AND AREA REGULATIONS

- A. Site Area - The minimum site area shall be five (5) acres whether a single tract or several tracts are joined in one application. Every development lot within the site area shall have an area of not less than two-thousand (2,000) square feet and such lot shall be not less than twenty (20) feet in width at the building line.
- B. Building Area Coverage - Not more than twenty-five (25) percent of the site area may be occupied by buildings.
- C. Minimum Structure Set Back
 1. Front Yard. There shall be a building setback on each street on which a site abuts which shall be not less than fifty (50) feet in depth from the right-of-way line, except that where the actual or designated front yard of any property lies along U.S. Route 1 or U.S. Route 202.

SECTION 2103. (Cont'd.)

- a. The building setback shall not be less than seventy-five (75) feet in depth from the right-of-way line.
 - b. The entire yard shall be planted with an all-season ground cover not to exceed one (1) foot in height. Such planting shall be continuous across the entire frontage from one side property line to the other side property line and may be broken only for access drives. A decorative buffer wall, fence, or dense hedge, which shall not be less than three (3) feet or greater than five (5) feet in height, shall be erected or planted a minimum of twenty-five (25) feet from the right-of-way line. The buffer shall be interrupted only for access drives.
2. Side Yards. For each building or unified group of buildings erected on a building development lot or group of lots there shall be two side yards neither of which shall be less than ten (10) feet in width, except that where a lot abuts a residence district in the Township or a similar district in an adjoining municipality, a side yard shall be provided which shall be not less than fifty (50) feet in width as herein provided.
3. Rear Yard. There shall be a rear yard on each building development lot or group of lots which shall be not less than twenty (20) feet or twenty (20) percent of the lot depth whichever is the greater, except that where the actual or designated rear yard lies along U.S. Route 1 or U.S. Route 202.
 - a. The rear yard shall be increased to a minimum of fifty (50) feet in depth, or twenty (20) percent of the lot depth, whichever is the greater.

SECTION 2103. (Cont'd.)

- b. No parking or loading shall be permitted in this yard.
- c. The entire yard shall be planted with an all-season ground cover not to exceed one (1) foot in height. Such planting shall be continuous across the entire frontage from one side property line to the other side property line and may be broken only for access drives.
- D. Height No building shall exceed thirty-five (35) feet in height; provided that such height limits may be exceeded by five (5) feet for each five (5) percent that the lot coverage is decreased below the maximum building area requirements, up to a maximum height of forty-five (45) feet.

2104. SPECIAL REGULATIONS

The special requirements prescribed for C-1 local Commercial Districts in Section 2004 shall apply to C-2, except as follows:

- A. Along each side or rear property line which directly abuts a Residence District in the Township or a similar District in an adjoining municipality, a buffer planting strip of not less than fifty (50) feet in width, as defined in Article 50, Landscaping, shall be provided. Along each street line bounding a Residence District, a strip of land not less than twenty (20) feet in width shall be suitably landscaped except for necessary sidewalks and accessways crossing the strip.
- B. Where two property lines lie along the center storage of a split highway, the owner may elect the frontages to be designated as front yard and rear yard but shall not change such designation once made. Major access shall be limited to the frontage designated as front yard and only one controlled access point from the outer frontage restricted to service vehicles only, shall be permitted in the designated rear yard. Customer traffic shall enter and leave via access drives in the front yard only, or in the side yard in cases of corner frontage.

SECTION 2104. (Cont'd.)

- C. To establish the location of front yards on a property having frontage on more than one road and in which that property frontage includes U.S. Route 322, U.S. Route 1 and U.S. Route 202, the front yard shall be designated as the frontage which lies along the subordinate road or highway. Primary access to the site shall be provided from the subordinate road or highway and only one access point, restricted to service vehicles only, shall be permitted in the side or rear yard from U.S. Route 322, U.S. Route 1 or U.S. Route 202. Customer traffic shall enter and leave via access drives in the front yard only.
- D. Landscaping Any part or portion of a site which is not used for buildings, other structures, loading and parking spaces and aisles, sidewalks and designated storage areas shall be planted with an all season ground cover and shall be landscaped according to an overall plan. Maximum advantage shall be taken of natural woods in landscaping.
- E. Screening of Roof Objects - Water towers, storage tanks, processing equipment, stand fans, skylights, cooling towers, communication towers, vents and any other structures or equipment which rise above the roof line shall be architecturally compatible or effectively shielded from view from any public or private dedicated street by an architecturally sound method to be submitted by the developer which shall be approved, in writing, by Township Board of Supervisors before construction or erection of said structures or equipment.
- F. Fire Protection - See Article 60, Section 6003.

2105. LANDSCAPING REGULATIONS

See Article 50.

2106. SIGN REGULATIONS

See Article 52.

2107. OFF-STREET PARKING AND LOADING REQUIREMENTS

See Article 51.

2108. SITE PLAN REVIEW REQUIREMENTS

See Subdivison and Land Development Ordinance.

ARTICLE 30

LI LIGHT INDUSTRY DISTRICT

3001. GENERAL DESCRIPTION AND PURPOSE

The LI Light Industry District is hereby established as a District in which the regulations are intended to permit and encourage industrial development and will be so located and designed as to constitute a harmonious and appropriate part of the physical development of the Township, to contribute to the soundness of the economic base of the Township, and otherwise further the purposes of this Ordinance.

Consistent with the general purpose of this Ordinance, the specific intent of this Article is:

1. To encourage the construction on and continued use of the land in the district for industrial purposes.
2. To prohibit any use which would substantially interfere with the development, continuation or expansion of industrial uses in the District.
3. To establish reasonable standards for buildings and other structures, the areas and dimensions of yards and other open spaces, and the provision of facilities and operation of industries to minimize air pollution, noise, glare, heat, vibration, fire, safety hazards, etc.

3002. USE REGULATIONS

A building may be erected, altered or used and a lot or premises may be used for any of the following purposes and for no other except those allowed on special exception provided that such building or use does not create any substantial amount of noise, vibration, smoke, dust, odors, heat, glare or other objectional influences.

A. Uses by Right

1. Scientific or industrial research, testing or experimental laboratory, or product development provided that any

SECTION 3002. (Cont'd.)

laboratory animals be kept within completely enclosed buildings at all times.

2. The manufacture, compounding, assembly, or treatment of articles or merchandise from the following materials, previously prepared outside of the Township.

- a. Bone
- b. Cloth
- c. Cord, twine, or rope, except jute and sisal
- d. Cork
- e. Feathers
- f. Felt
- g. Fiber
- h. Glass
- i. Hair (except washing, curling or dyeing)
- j. Horn
- k. Leather and fur (excluding tanning, curing, and dyeing)
- l. Metals
- m. Paper
- n. Plaster
- o. Plastics
- p. Precious or semi-precious stones
- q. Shell
- r. Tobacco
- s. Wood (excluding use of planing mill, chemical treatment or preservation and the bulk processing of wood and lumber.

Longwood Program

SECTION 3002. (Cont'd.)

3. The manufacture, compounding, processing, canning, containing, packaging, treatment, sale and distribution of such products as:
 - a. Candy
 - b. Ceramic products, using only previously pulverized clay
 - c. Clocks and watches
 - d. Cosmetics
 - e. Electrical or electronic devices, also home, commercial or industrial appliances and instruments, including the manufacture of accessory parts or assemblies.
 - f. Food products, including bottling, canning and/or distribution of liquids for human consumption, including the manufacture of soft drinks and carbonated waters.
 - g. Hardware, cutlery, tools, scientific instruments and apparatus.
 - h. Jewelry
 - i. Medical, drafting, and other professional and scientific instruments and equipment
 - j. Light metal processing, such as cleaning, machining, grinding, stamping, extrusion, polishing, finishing, and excluding use of drop hammer.
 - k. Musical instruments
 - l. Novelties
 - m. Office machines and equipment
 - n. Optical goods and equipment

SECTION 3002. (Cont'd.)

- o. Paper and cardboard products from previously prepared material purchased outside the Township.
- p. Pharmaceuticals
- q. Photographic equipment
- r. Small rubber products and synthetic treated fabrics (excluding all rubber and synthetic processing).
- s. Sporting goods
- t. Textiles, including spinning and weaving, but excluding wool scouring and pulling or jute or burlap processing or reconditioning or dyeing of any sort.
- u. Toiletries
- v. Toys

...provided, however, that the following uses shall not be permitted:

manufacture of sauerkraut, vinegar or yeast, refining or rendering of fats, bones or oils, roasting of coffee, spices, or soy beans, milling of flour, drying, smoking, pickling, preserving or curing meats or fish. See also other prohibited uses in Article 61.

- 4. Publishing, printing, lithography, binding, and kindred arts.
- 5. Cold storage plant, frozen food plant and lockers.
- 6. Food commissaries and catering plants.
- 7. Laundry, dry cleaning, provided no inflammable fluids are used.
- 8. Assembly, sales, repairs, and service of business and office machines, equipment and devices.

SECTION 3002. (Cont'd.)

9. Sales, service, repairs of farm and garden machinery, equipment and supplies.
10. Design, manufacture, distribution and sale of burial monuments and underground burial vaults.
11. Manufacture and/or storage of construction materials and equipment.
12. Machine, plumbing, heating, roofing, carpenter, cabinet, upholstery, furniture, electrical, welding, buffing, finishing, plating, heat-treating, annealing, prefabricating, craftsman's, tinsmith, pipe-fitting, paperhanger's, painter's, and decorator's shops.
13. Mail order store, house, or business.
14. Carpet or rug cleaning.
15. Warehouse - wholesale, storage or distribution.
16. An office building or offices of an administrative, executive, governmental, professional or similar agency.
17. Public utility installation.
18. Cinema, radio, and television stations or studios.
19. Central heating plant.
20. Underground storage, in bulk, or fuel oil for sale and distribution, excluding gasoline and other highly volatile or explosive fluids.
21. Accessory use on the same lot with and customarily incidental to any of the above permitted uses and not detrimental to the neighborhood, which uses may include:
 - a. Storage within completely enclosed building in conjunction with a permitted use.

SECTION 3002. (Cont'd.)

- b. A cafeteria or other service facility located within the building and separated for the exclusive use of occupants of the building.
- c. A recreational area for occupants.
- d. Living quarters for watchman, caretakers or similar employees.
- e. Signs as permitted in Article 52.

B. Uses by Special Exception

- 1. Any nonresidential use of the same character as any of the uses hereinbefore specifically permitted.
- 2. Outside treatment or storage of materials or waste products, where such materials are adequately enclosed by a fence erected of substantial materials conforming to the design of the building, and where such use is accessory to a permitted use.

3003. YARD AND AREA REGULATIONS

- A. Lot Area and Lot Width - A minimum of three (3) acres, with a lot width of no less than two-hundred (200) feet, shall be provided for each building or group of buildings.
- B. Total Site Coverage - The maximum area permitted to be occupied by a building or buildings and enclosed storage and shall be forty (40) percent of the lot area.
- C. Minimum Structure Setback
 - 1. Front Yard. One-hundred-fifty (150) feet from each street right-of-way on which the lot abuts.
 - 2. Side Yards. For every detached building, two side yards which shall have an aggregate width of not less than eighty (80) feet, and neither of which shall be less than thirty (30) feet.

SECTION 3003. (Cont'd.)

Longwood Program

However, no building or other permanent structure and no parking, loading or service area shall be within one-hundred-fifty (150) feet of a property or a zoning boundary line of a residential district.

3. Rear Yard. Thirty (30) feet, except that no building or other permanent structure and no parking, loading, or service area shall be within one-hundred-fifty (150) feet of a property or a zoning boundary line of a residential district.

D. Height - No building shall exceed sixty-five (65) feet in height.

Permission to construct a building over sixty-five (65) feet in height may be permitted by the Zoning Hearing Board as a special exception.

3004.

PERFORMANCE REQUIREMENTS

A. Smoke - No smoke shall be emitted from any chimney or other source visible gray greater than No. 1 of the Ringelmann Smoke Chart as published by the U.S. Bureau of Mines, except that smoke of a shade not darker than No. 2 on the Ringelmann Chart may be emitted for not more than four minutes in any thirty (30) minute period.

These provisions applicable to visible gray smoke, shall also apply to visible smoke of any other color, with an equivalent apparent opacity.

B. Dust and Dirt, Fumes, Vapors, and Gases

1. The emission of dust, dirt, fly ash, fumes, vapors or gases which can cause any damage to human health, to animals or vegetation or to other forms of property, or which can cause any soiling or staining of persons or property at any point beyond the lot line of the use creating the emission is herewith prohibited.

SECTION 3004. (Cont'd.)

2. No emission of liquid or solid particles from any chimney or otherwise shall exceed 0.3 grains per cubic foot of the covering gas at any point beyond the lot line of the use creating the emission. For measurement of the amount of particles in gases resulting from combustion, standard correction shall be applied to a stack temperature of five-hundred (500) degrees F. and fifty (50) percent excess air in stack at full load.
- C. Noise - The sound pressure level of any operation shall not exceed, at any point on the boundary of a non-residential district, the decibel levels in the designated octave band shown below, except for emergency alarm signals, and subject to the following corrections: subtract five (5) decibels for pulsating or periodic noises. And five (5) decibels for noise sources operating less than twenty (20) percent of any one (1) hour period.

SOUND LEVELS

Octave Band in Cycles Per Second	Maximum Permitted Sound Level	
	Decibels = $(10 \log. \frac{P_1}{P_2})$ where $P_2 = 0.0002$	
	Along Agricultural or Residential Dis- trict Boundaries	Along Any Other District Boundaries
0 to 600	50	55
600 to 2400	38	40
2400 to 4800	35	38
Above 4800	32	38

- D. Odors - There shall be no emission of odorous gases or other odorous matter in such quantities as to be offensive at any point on or beyond the lot boundary line within which the industrial operation is situated. Any process which may involve the creation or emission of any odors shall be provided with a secondary safeguard system in order that control will be maintained if the primary safeguard system should fail. There is

SECTION 3004. (Cont'd.)

hereby established as a guide in determining such quantities of offensive odors Table 111 (Odor Thresholds) in Chapter 5, "Air Pollution Abatement Manual," copyright 1951 by Manufacturing Chemists' Association is cited, the numerical average value for all authorities listed may be used.

- E. Glare and Heat - No industrial use shall carry on an operation that would produce heat or glare beyond the property line of the lot on which the industrial operation is situated.
- F. Vibration - Machines or operations which cause vibrations shall be permitted, but in no case shall any such vibrations be perceptible along the boundary line of any non-industrial district.
- G. Radioactivity, Electrical, Radio Disturbance, or EMF and RFI Emission - There shall be no activities which emit dangerous radioactivity disturbance (except from domestic household appliances) adversely affecting the operation at any point of any equipment other than that of the creator of such disturbance.

3005. WASTE STORAGE AND DISPOSAL

- A. No highly flammable or explosive liquids, solids or gases shall be stored in bulk above ground, except tanks or drums of fuel directly connecting with energy devices, heating devices, or appliances located and operated on the same lot as the tanks or drums of fuel.
- B. All outdoor storage facilities for fuel, raw materials products; and all fuel, raw materials and products stored outdoors, shall be enclosed by an approved safety fence and visual screen and shall conform to all yard requirements imposed upon the main buildings of this District.
- C. No materials or wastes shall be deposited upon a lot in such form or manner that they may be transferred off the lot by natural causes or forces, nor shall any substance which can contaminate a stream or watercourse

SECTION 3005. (Cont'd.)

or otherwise render such stream or watercourse undesirable as a source of water supply or recreation, or which will destroy aquatic life, be allowed to enter any stream or watercourse.

- D. All materials or wastes which might cause fumes or dust or which constitute a fire hazard or which may be edible or otherwise attractive to rodents or insects shall be stored outdoors only if enclosed in containers which are adequate to eliminate such hazards.
- E. All applicable State and County regulations pertaining to sanitary land fill must be complied with.

3006.

OTHER DEVELOPMENT REQUIREMENTS

- A. All buildings shall be arranged in a group or groups of buildings, and the distance, at the closest point between any two buildings, or groups of attached buildings shall be not less than twenty-five (25) feet except where such auxiliary building shall be used for housing a transformer, tanks or to be used as a hose house or other items which are to be used within the main building.
- B. The proposed development shall be readily accessible to two (2) or more major or secondary streets and ingress and egress shall not be permitted from or to residential streets.
- C. A planting area shall be provided along each property or right-of-way line, that is opposite or adjacent to a residential zoning district boundary line of a type and width as specified in Article 50, Section 5002.A.1 and 5002.A.2.
- D. Any part or portion of a site which is not for buildings, other structures, loading and parking spaces and aisles, sidewalks and designated storage areas shall be planted with an all-season ground cover and shall be landscaped to an over-all plan. Maximum advantage shall be taken of natural woods in landscaping.

SECTION 3006. (Cont'd.)

- E. All spaces between buildings and all parking, loading and unloading, access and service areas shall be adequately illuminated at night. Such illumination, including sign lighting shall be arranged so as to protect the surrounding streets and adjoining property from direct glare or hazardous interference of any kind.
- F. On fire protection, requirements of Article 60, Section 6003, shall be met.
- G. On all mechanical equipment not enclosed in a structure, regulations given in Article 60, Section 6003 shall be followed.
- H. Water towers, storage tanks, processing equipment, stand fans, skylights, cooling towers, communication towers, vents, and any other structures or equipment which rise above the roof line shall be architecturally compatible or effectively shielded from view from any public or private dedicated street by an architecturally sound method to be submitted by the developer, which shall be approved, in writing by the Township Board of Supervisors, before construction or erection of said structures or equipment.
- I. Where a development abuts a State highway, a traffic survey shall be conducted and provisions shall be made for appropriate automatic traffic control signal and acceleration and deceleration lanes if required by the Township of Concord and approved by the Pennsylvania Department of Transportation. Such a report, and plans for access roads, after approval by the Pennsylvania Department of Transportation will then be submitted to the Board of Supervisors.
- J. Sewage Disposal - Industrial sewage pre-treatment facilities shall be permitted as required by State regulations. Secondary and tertiary treatment facilities shall be permitted where essential to an appropriate site plan. However, septic systems using on-lot drainage fields shall be prohibited.

SECTION 3006. (Cont'd)

All industries intending to discharge liquid wastes into any reaches of the creeks or drainage ways flowing through or indirectly draining areas of the Township shall provide such levels of treatment described above as are required to maintain the quality and composition of such discharge at the levels specified in the Water Quality Criteria of the Pennsylvania Clear Streams Law of 1937 as amended for the Brandywine Creek and Tributaries (Zone 01.102) and shall obtain approval and a permit to discharge from the State Sanitary Water Board. Proof of such permit shall be submitted to the Board of Supervisors before approval shall be given to occupy and use the buildings or waste treatment facilities.

The Clear Streams Law was enacted as Act 4 of June 22, 1937, PL 1987, as amended. This law has since been incorporated into various chapters of Title 25, Rules and Regulations of the Department of Environmental Resources.

3007. LANDSCAPING REGULATIONS

See Article 50

3008. SIGN REGULATIONS

See Article 52

3009. OFF-STREET PARKING AND LOADING REQUIREMENTS

See Article 51

3010. SITE PLAN REVIEW REQUIREMENTS

See Subdivision and Land Development Ordinance

ARTICLE 32

PLO - PLANNED LABORATORY - OFFICE DISTRICT

3201. PURPOSE

PLO - Planned Laboratory - Office Districts are designed primarily to provide for selected modern laboratory and office establishments which: (1) provide for attractive large - site, low - lot coverage development in areas where traditional business development would be inappropriate; (2) strengthen and diversify the Township tax base; and (3) are compatible with the character of surrounding areas.

A. Uses by Right - A building or unified group of buildings may be erected or used and a lot may be used or occupied for any of the following purposes:

1. Scientific or industrial research, testing or experimental laboratory or similar establishment for research or product development, provided there is no commercial production or storage of any commodity or substance except for storage necessary for scientific research.
2. Office building.
3. Accessory uses of the following:
 - a. A cafeteria or other service facility located within the building and operated for the exclusive use of occupants of the building, guests and invitees, in the normal course of business.
 - b. A recreational area for occupants of the building.
 - c. Storage within a completely enclosed building in conjunction with a permitted use.
 - d. Living quarters for watchmen, caretakers or similar employees, provided that no such living accommodation or sleeping quarters shall

SECTION 3201. (Cont'd.)

be located on the first floor of a building.

- e. Signs as permitted in Article 52 Sign Regulations.

3202.

AREA AND HEIGHT REGULATIONS

- A. Lot Area and Lot Width - Every lot on which a building or combination of buildings is hereafter erected or used shall have a lot area of not less than fifty (50) acres and such lot shall be not less than three-hundred (300) feet in width at the building line. In the event a development site consists of fifty (50) or more acres upon which is to be located one (1) building structure used and occupied by one (1) business entity, one (1) additional lot with a lot area of not less than ten (10) acres may be located upon the development site provided both lots and structures located thereon otherwise comply with all of the terms and provisions of this Ordinance.
- B. Total Site Coverage - Not more than twenty (20) percent of the area of any lot may be occupied by buildings and a total of not more than sixty (60) percent of the area of any lot may be occupied by buildings and parking areas.
- C. Minimum Structure Setback - No building shall be located less than one-hundred (100) feet from a street right-of-way line nor less than one-hundred (100) feet from a side or rear property line.

In the event more than one building is to be erected or used on a lot such building shall have front, rear and side yard setbacks of seventy-five (75), and seventy-five (75) and fifty (50) feet, respectively.

A driveway or road system may be located within said front, rear or side yard setbacks provided that a minimum of twenty (20) feet of properly landscaped property is planted and maintained between the front, rear and side property line and the driveway or road system.

SECTION 3202. (Cont'd.)

In the event the development of the tract involves the installation by the developer of an approved "loop road" as part of the overall traffic network of the intersection of U.S. Route 1 and U.S. Route 202 the Supervisors have the right to permit the loop road right-of-way on one (1) side to coincide with the property line, and in such event the applicant shall be relieved of the requirements for buffering between the road right-of-way and the property line; and no building shall be located less than one-hundred (100) feet from the "loop road" right-of-way and there shall be a buffer planting strip of not less than fifty (50) feet in width or a five (5) foot high earthen landscaped berm within said twenty (20) foot buffer strip between the "loop road" right-of-way and said building line setback.

- D. Height - No building shall exceed two (2) stories nor more than thirty-five (35) feet in height. Basement areas of buildings may not be used for human occupancy.

3203. PERFORMANCE STANDARDS

No building may be erected, altered, or used, and no lot or premises may be used which is noxious or offensive or which constitutes a hazard to the immediate surrounding area. Each permitted use shall provide and utilize such smoke, noise and other control devices as are necessary to assure that such use will not:

- A. Constitute any nuisance beyond the boundary of the site by reason of dissemination of noxious, toxic or corrosive fumes, smoke, odor or dust.
- B. Result in noise or vibration exceeding the average intensity of noise from other causes at the boundary site.
- C. Produce objectionable heat, glare or radiation.
- D. Result in electrical disturbance in nearby residences.

SECTION 3203. (Cont'd.)

- E. Create any other objectionable condition which is dangerous to health, safety or the proper use of adjoining property.

3204. SPECIAL DEVELOPMENT REGULATIONS

- A. Each building shall be designed so as to minimize its commercial appearance and shall, insofar as practicable, afford minimum external evidence of the nature of the operation conducted therein.
- B. No products or goods shall be publicly displayed on the exterior of the premises, and no showrooms, display rooms, or rooms of like use for the public display of goods or products shall be permitted.

3205. GENERAL DEVELOPMENT REGULATIONS

A. Utilities and Sewers

1. All utility lines servicing the buildings shall be placed underground within the lot lines of the property.
2. All buildings shall be served by public water and, if existing within a reasonable proximity, an operating municipal or other available sewage treatment plant.
3. In locations where there is no access to an operating municipal or other available sewage treatment plant, one or more on-site sewage treatment systems must be provided. Said system or systems must be in accordance with the Township Sewage Facilities Plan and approved by the Department of Environmental Resources of the Commonwealth of Pennsylvania.

- B. Disposal Requirements - All trash, garbage, rubbish and debris of every kind shall be stored within the building in fire-proofed rooms or containers, or in a screened and shielded courtyard area, and shall be collected and disposed of as often as may be required under the particular circumstances

SECTION 3205. (Cont'd.)

by private collectors and at no cost to the Township.

- C. Development Agreement - Upon final approval of subdivision and/or land development plans, and as a condition to such approval, the Board of Supervisors may require the owner to enter into a written agreement with the Township to guarantee completion of the development within a stated period of time, and compliance with all applicable laws, ordinances, rules and regulations, and conditions of approval. Said guarantee may be in the form of a bond with or without corporate or other suitable surety or security, as determined by the Board of Supervisors.

LANDSCAPING REGULATIONS

- A. Screening Along Property Lines Adjoining Other Zoning Districts
1. Along each side or rear property line which directly abuts a residence in the Township or similar district in an adjoining municipality: ... see Article 50 Landscaping - Section 5002.A for width and nature of planting.
 2. Along each street line bounding a residence district, a strip of land not less than fifty (50) feet in width shall be suitably landscaped except for necessary sidewalks and accessways crossing the strip or a twenty (20) foot wide buffer strip with a five (5) foot berm; except that property abutting a "loop road" shall be governed by the provisions of Section 3203.C.
- B. Mechanical Equipment - See Article 50 - Section 5002.A.3.
- C. General Landscaping
1. The lot and each building, parking area and service area shall be suitably landscaped in accordance with a landscaping plan, prepared by a licensed landscape architect and approved by the Board of Supervisors.

SECTION 3206. (Cont'd.)

2. All landscaping shall be appropriate to the architectural design of the building, using to the maximum extent possible the existing terrain and trees on the site.

D. Screening of Roof Objects - Water towers, storage tanks, processing equipment, stand fans, skylights, cooling towers, communication towers, vents and other structures or equipment which arise above the roof line shall be architecturally compatible or effectively shielded from view from any public dedicated street or private thoroughfare by an architecturally sound method which shall be approved by the Board of Supervisors.

3207. SIGN REGULATIONS

See Article 52

3208. OFF-STREET PARKING AND LOADING REQUIREMENTS

A. General Characteristics - Adequate off-street parking areas shall be provided.

B. Specific Location

1. No more than three (3) per centum of the parking spaces shall be located between the building and any adjoining highway upon which the building fronts.
2. No parking, loading or service area shall be permitted in the front yard setback within seventy-five (75) feet of the street right-of-way line, nor shall any parking, loading or service area be permitted within fifty (50) feet of the side or rear property line, except that parking may be allowed by the Supervisors within twenty (20) feet of the side or rear yard property line provided there is installed and maintained a five (5) foot high earthen landscaped berm within said twenty (20) foot strip.

3209. SIZE AND NUMBER OF PARKING SPACES

A. Size - Each parking space shall be not less than one-hundred-eighty (180) square feet in area (9' X 20').

SECTION 3209. (Cont'd.)

- B. Number - Not less than one (1) automobile parking space with suitable access shall be provided for each three-hundred (300) square feet of gross floor area.

In that the need for parking is dependent upon the type and volume of use of a building, these minimum parking requirements may be increased or decreased by the Board of Supervisors, upon the recommendation of the Township Planning Commission, to the required size and number to provide adequate off-street parking for the contemplated type and volume of use.

3210. PAVING

All parking, loading, access and service areas shall be paved with concrete, blacktop or other hard surface material.

3211. ACCESS

- A. Access to a major highway or secondary street shall be controlled in the interest of public safety by the use of deceleration and acceleration lanes, buffer strips and traffic control devices. Each building or group of buildings shall be physically separated from the highway or street by a planting strip or other suitable barrier against unchanneled motor vehicles ingress and egress, except for designed accessways.

- B. In the event that the lot fronts upon a state highway the Department of Transportation of the Commonwealth of Pennsylvania shall approve the means of ingress and egress to and from the lot.

- C. Traffic control devices required to accommodate the traffic generated by the use of the site shall be at the expense of the owner.

3212. LIGHTING

All parking, loading, access, and service areas shall be adequately illuminated at night. Said lighting shall be arranged so as to protect the streets, highways, and adjoining property from

SECTION 3212. (Cont'd.)

direct glare. The location, type and intensity of said lighting shall be in accordance with a lighting plan approved by the Board of Supervisors.

3213. LOADING AND UNLOADING

In addition to the required off-street parking areas, there shall be provided off-street areas for the loading and unloading of delivery trucks and for the servicing of the buildings by refuse collection, fuel and other service vehicles, which areas shall be located at the side or rear of the building, shall be adequate in size and shall be so arranged that each may be used without blockage or interference with the use of the accessways or the automobile parking facilities.

ARTICLE 50

LANDSCAPING

5001. GENERAL LANDSCAPING

All of PropertyStreet TreesOther Trees, including Tree ProtectionBuildings Integrated with LandSidewalk Location

5002. SCREENING AND BUFFERING

A. Screening Along Property Line Adjoining Other Zoning Districts

1. Width of Buffer Strip. The width of the buffer strip shall conform to the following table:

District for which requirements are given	District that adjoins side or rear property line			
	Residential R1 to R3	Residential R-A, RAH, RPRD, RMHD RMU	Commercial C-1, C-2 C-2A, C-3	Industrial LI, PIP
<u>Residential</u> R1, R3*	-0-	-0-	-0-	-0-
<u>Residential</u> R-A, RAH, RPRD, RMHD, RMU**	30 feet	-0-	-0-	-0-
<u>Commercial</u> C-1, C-2, C-2A, C-3, RMU***	30 feet	30 feet	-0-	-0-
<u>Industrial</u> LI, PIP	50 feet	50 feet	15 feet	-0-

* In the case of Cemetery or a conditional use, width of boundary planting shall be twenty-five (25) feet, no matter what district it may adjoin, including R1 to R3.

** RMU - Residential uses.

*** RMU - Commercial uses.

1. Nature Planting in Buffer Strip. Buffer planting strip of yard space which is landscaped for the full width, and on which is placed a screen of sufficient density and of sufficient height to constitute an effective screen and give a maximum protection and immediate visual screening to an abutting property. The required screen shall be permanently maintained and shall constitute a planting of dense evergreens or a compact hedge, or where otherwise specifically designated by the Ordinance, an appropriate wall, fence, suitable planting or combination thereof. All planting shall comply with the provisions of the Township Subdivision Regulations.

If natural buffering exists it may be incorporated in the planting plan.

3. Screening of Mechanical Equipment not Enclosed in a Structure. All mechanical equipment not enclosed in a structure shall be fully and completely screened from view in a manner compatible with the architectural and landscaping style of the remainder of the lot. Such screening shall be subject to site plan and architectural review by the Township.

SECTION 5106. (Cont'd.)

1. A maximum of fifteen (15) feet at the curb line for one-way use only.
 2. A maximum of twenty-five (25) feet at the curb line for two-way use.
- L. The width of interior drives leading from the public street to the parking lot shall be as follows:

	<u>One Lane</u>	<u>Two Lane</u>
Right-of-way (where applicable)	40 feet	50 feet
Cartway	18 feet	24 feet

5107. LIGHTING

- A. All driveways, aisles, maneuvering spaces, vehicular service areas, or spaces between or about buildings, other than those relating to a dwelling, shall be adequately illuminated.
- B. All outside lighting, including sign lighting, shall be directed in such a way as not to create a nuisance in any agricultural, institutional or residential district, and in every district all such lighting shall be arranged so as to protect the street or highway and adjoining property from the street or highway and adjoining property from direct glare or hazardous interference of any kind. Any luminary shall be equipped with a glare shielding device approved by the Township Engineer. The height of any luminary must also be approved by the Township Engineer and be less than twenty-five (25) feet.
- C. The parking and loading and ingress and egress of any use within this zoning district shall be provided with a minimum of five (5) foot candles and a maximum of twenty (20) foot candles at any point, with lighting standards in parking areas being located not farther than one-hundred (100) feet apart.

5108. LANDSCAPING

- A. Objective - The objective of these requirements is to ensure the good appearance of vehicular parking areas in Concord Town-

SECTION 5108. (Cont'd.)

thirty (30) cars, the area necessary for shading can constitute the entire planting requirement.

- b. For all size lots, shade trees may be planted (1) in planting islands or (2) in perimeter buffer area, but only up to twenty (20) percent in lots of over thirty (30) cars.
- c. Planting areas must be separate; in lots of sixty (60) or more cars, no more than twenty (25) percent in one island. In lots of under sixty (60) cars, the planting areas may be peninsular and attached to the perimeter buffer areas, but not more than twenty (20) percent of the planting area may be in any such location.

D. Perimeter Buffering

1. Buffering Along Public Highway Frontage.
See Table 51-1

2. Buffering From Residential Uses

- a. A screen five (5) feet wide (minimum), eight (8) feet high (minimum), "hide" opacity must be planted to buffer all residential uses from parking areas for over six (6) cars and from all service areas and must be protected by a two and one-half (2½) foot space between the edge of the planting and curbing or wheelstops.

3. Buffering Between Zoning Districts. A dividing screen of at least "filter"* opacity to four (4) feet high (minimum) shall separate all districts (except that in light or heavy manufacturing districts thirty (30) cars shall be the

* See Table on page 51-3.

SECTION 5108. (Cont'd.)

ship, and to protect and preserve the appearance, character, and value of surrounding neighborhoods, and thereby promote the general welfare by providing for the installation and maintenance of landscaping for screening and aesthetic qualities, since the Board of Supervisors finds that the peculiar characteristics and qualities of Concord Township justify regulations to perpetuate its aesthetic appeal on a township-wide basis.

- B. Landscape Plan and Review - The parking landscape plan will be prepared as part of the landscape plan for the overall development, and reference to reviewing the plan is made under Site Plan Review Requirements at the end of the requirements for the particular zoning district, in the Zoning Ordinance. Reference is also made to Article 50 Landscaping, in general.

C. Interior Coverage Requirements

1. Shading. A minimum of ten (10) percent of the paved area shall be in shade. Shaded area can be built up as follows:

- a. Trees with thirty (30) foot spread count seven-hundred (700) square feet each.
- b. Trees with twenty (20) foot spread count three-hundred (300) square feet each.

Tree planting shall be a minimum of four (4) feet apart either direction and dispersed as evenly as possible over the parking lot.

2. Interior Planting Islands

- a. A minimum of ten (10) percent of the calculated area required for parking shall be added as a planted area. For lots of over thirty (30) spaces or more than thirty (30) percent of this planting can be met by perimeter peripheral buffer planting. For lots under

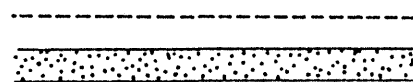


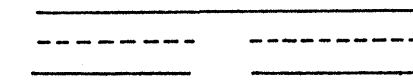
Longwood Program

SECTION 5108. (Cont'd.)

minimum). Passageway for vehicles from one lot to the other may be kept free from planting.

TABLE 51-1

PARKING LOT BUFFERS: PLANTING STRIPS WITHIN SETBACK ON ROAD FRONTAGE

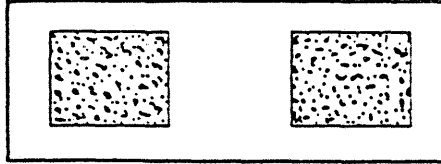
TYPE OF ROADS	LOT SIZES NOT AFFECTED	LOT SIZES AFFECTED AND TYPE OF BUFFER	GENERAL REQUIREMENTS FOR PERIMETER BUFFERS
SUPERHIGHWAY 	0 - 249 Cars	250 Cars - Hide	HEIGHT: 18 inches at planting Plants from 0-6 ft. category with normal mature height of 4 ft. (minimum) - unless vines are to be grown over (4 ft. minimum) fence or wall Berm, wall, or fence 4 ft. minimum height
ARTERIAL 	0 - 9 Cars	10 - 29 Cars Demark 30 - 79 Cars Filter 80 - 249 Cars Obscure Over 250 Cars Hide	PLANTING TREATMENT: Standards for screen opacity given in 'Planting Strip Options' in the 0-6 ft. category in Table 51-2 Planting strip area must be 1 ft. (minimum) from sidewalk or 5 to 8 ft. from roadside Planting strip width must be 5 ft. (minimum) and set back 2 1/2 ft. (minimum) from curb or wheel stop Shading requirement trees may be planted in perimeter planting strip area as long as 80% remain in interior in lots for over 30 cars
COLLECTOR 	0 - 9 Cars	10 - 29 Cars Demark 30 - 149 Cars Obscure Over 150 Cars Hide	
LOCAL 	0 - 5 Cars	6 - 9 Cars Demark 10 - 29 Cars Filter 30 - 150 Cars Obscure	

0-6 FT. HEIGHT SCREENS Demarcation

TABLE 51.2A

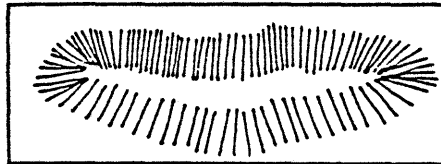
10-15 ft. strip

B



Planter with change in material. ground cover, water, stone

A



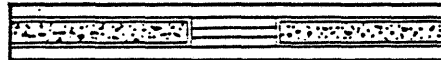
Berm

E



Planter with ground covers, shrubs

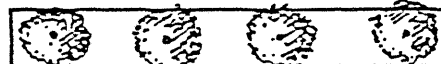
D



Change of levels with ground cover

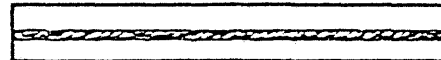
5 ft. strip

C



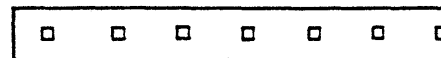
One (1) small planter or shrub spaced every twelve (12) feet (3 or 4 plants)

B



Wall

A

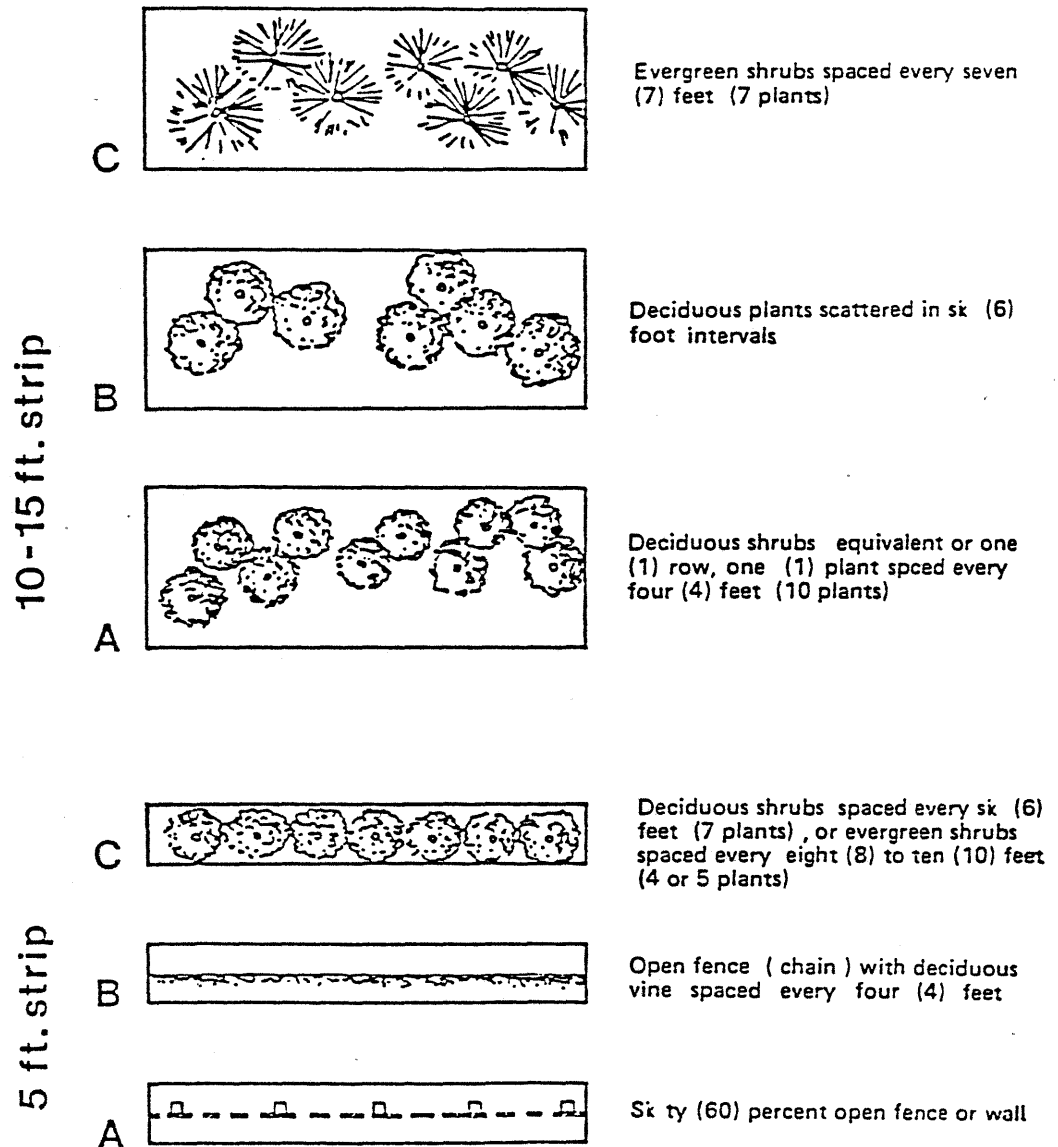


Bollard or open fence

ILLUSTRATED IN FORTY (40) FOOT LENGTHS

0-6 FT. HEIGHT SCREEN Filter

TABLE 51.2B



ILLUSTRATED IN FORTY (40) FOOT LENGTHS

0-6 FT. HEIGHT SCREEN

TABLE 51-2C

Obscure

5-10 ft.
strip

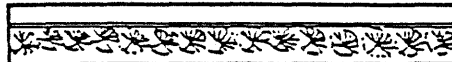
5 ft. strip

E



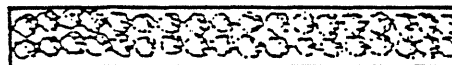
Combination of planters with deciduous shrubs spaced every two (2) feet with evergreen shrubs every three and one-half (3 1/2) feet.

D



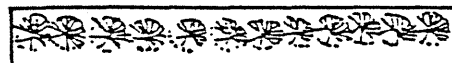
Open (chain) fence, evergreen vine or shrub spaced every three (3) feet. (15 plants)

C



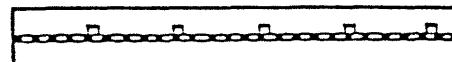
Two (2) rows of planters with deciduous shrubs every two (2) feet. (36 plants)

B



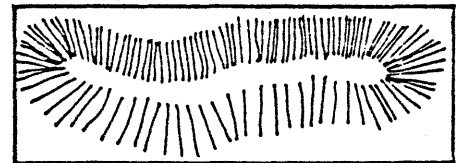
Evergreen shrubs every three and one-half (3 1/2) feet. (12 plants)

A



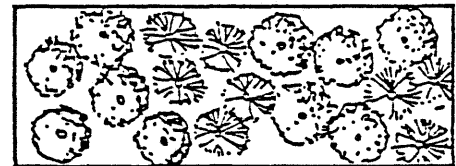
Twenty (20) percent open fence or wall

D



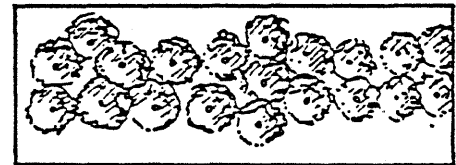
Berm and dense shrub spaced every four (4) feet if necessary for height.

C



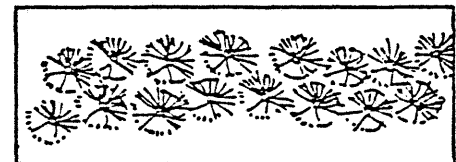
Combination of evergreen shrubs spaced every three (3) feet along with one (1) row of deciduous shrubs spaced every two (2) feet.

B



Dense deciduous shrubs in two (2) rows, one (1) plant every two (2) feet. (40 plants) plus one (1) row of evergreen every six (6) feet (7 plants)

A



Evergreen shrubs every three (3) feet (16-20 plants)

ILLUSTRATED IN FORTY (40) FOOT LENGTHS

0-6 FT. HEIGHT SCREEN

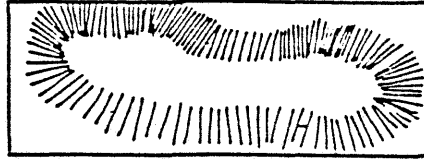
Hide

ILLUSTRATED IN FORTY (40) FOOT LENGTHS

TABLE 51-2D

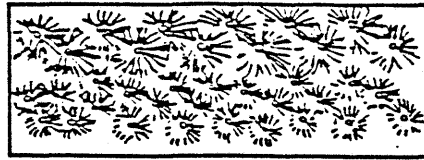
10-15 ft. strip

D



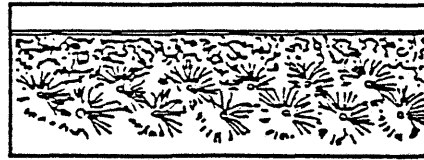
Berm plus ten (10) evergreen shrubs if necessary for height

C



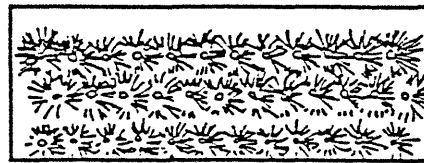
Dense evergreen shrubs spaced eighteen (18) inches apart. (24 plants) Evergreen shrubs spaced three (3) feet apart. (12 plants)

B



Evergreen shrubs spaced every three and one-half (3 1/2) feet with evergreen shrub .

A



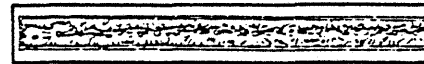
Evergreen shrubs spaced every three and one-half (3 1/2) feet with evergreen shrub/ vine spaced every eighteen (18) inches over an open fence.

C



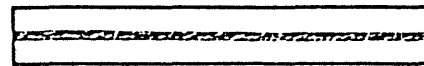
Evergreen shrubs spaced every three and one-half (3 1/2) feet forming two (2) rows. (24 plants) and twelve (12) plants from "shrub ground cover". Combination of solid wall or fence plus planters with evergreen shrubs placed every two (2) feet.

B



Dense evergreen hedge, planting every two (2) feet forming a row of twenty (20) plants.

A



Solid wall or fence.

5 ft. strip

CONCORD TOWNSHIP
SUBDIVISION AND LAND DEVELOPMENT REGULATIONS

1. Section 415 Preservation of Resources
2. Section 508 Street Trees

or for such other uses as may increase danger to health, life or property or aggravate erosion or flood hazard until all such hazards have been eliminated or unless adequate safeguards against such hazards are provided by the subdivision plans.

414.2 Such land within the subdivision shall be set aside on the plat for uses as shall not be endangered by periodic or occasional inundation or shall not produce unsatisfactory living conditions.

414.3 Where flooding is known to have occurred within an area shown on the plat, such area shall be clearly marked "subject to periodic flooding" and shall not be platted in streets and lots.

Section 415 Preservation of Resources

415.1 Wherever possible, Subdivider shall preserve trees, groves, waterways, scenic points, historic spots, and other community assets and landmarks.

415.2 Subdivisions shall be laid out as to avoid the necessity for excessive cut or fill.

415.3 Top soil shall not be stripped, covered or removed from the subdivision site.

Section 416 Underground Utilities

416.1 Electric, telephone and all other utility facilities shall be installed underground by the subdivider unless, in the opinion of the Board of Township Supervisors, special conditions require otherwise. In such event such installations shall be as directed by the Board.

416.2 Where telephone and electric service lines are placed underground, conduits or cables shall be placed within easements or dedicated public ways, in a manner which will not conflict with other underground services. Further, all transformer boxes shall be located so as not to be unsightly or hazardous to the public.

Section 417 Requirement for Utilities

The Board of Supervisors may require the Subdivider to furnish all necessary public utilities in and to the proposed subdivision. Water supply and sewage disposal must be furnished in accordance with the plan approved by the appropriate State, County, and Township Officials.

Section 508 Street Trees

Wherever the site is not naturally wooded the subdivider may be required to plant street trees of not less than two and one-half (2 1/2) inches caliper as measured six (6) inches above the ground within the right of way and at not more than fifty (50) feet apart as measured along each side of the street. For the purpose of these regulations, street trees are limited to the following: Moraine Honey Locust, Little Leaf European Linden, Pin Oak, Scarlet Oak, London Plane Tree, Red Oak, Columnar-type Maples, Sugar Maple, Norway Maple, and Sweet Gum.

ARTICLE VI. PLATS AND DATA

Section 601 General Subdivision Information

General subdivision information shall describe or outline the existing conditions of the site and the proposed developments as necessary to supplement the drawings required below. This information may include data on existing covenants, land characteristics, and available community facilities and utilities; and information describing the subdivision proposal such as number of residential lots, typical lot width and depth, price range, business areas, playgrounds, park areas, and other public areas, protective covenants and proposed utilities and street improvements.

Section 602 Location Map

The location map shall show the relationship of the proposed subdivision to existing community facilities which will serve it, influence it, or are located close by. The map shall include development name and location; main traffic arteries; public transportation lines; shopping centers; elementary and high schools; parks and playgrounds; other community features such as railroad stations, airports, hospitals and churches; title; graphic scale; north point; and date.

Section 603 Sketch Plan

The Sketch Plan shall be prepared on a topographic map, and shall show in simple sketch form the proposed layout of streets, lots, and other features in relation to the existing conditions. The Sketch Plan may be a freehand pencil sketch made directly on a print of the topographic map. In any event the Sketch Plan shall include the existing topographic data listed in Section 604 below or such of these data as the

RADNOR TOWNSHIP CASE STUDY

APPENDIX C

TOWNSHIP MANAGER INTERVIEW

Township Manager: *Charles Guernsey*

Date of Interview: *November 7, 1985*

Date current regulations effective:

Subdivision/Land Development: *1983*

Zoning: *1981*

How are proposed designs/plants reviewed?

Proposed plans inspected by Township Manager and

Township Engineer; approval by Planning Commission.

Are there individuals on your Planning Commission or Zoning Hearing Board who are professionally qualified to review landscape plans?

No.

If not, are there other individuals upon whom you rely for professional advice in routine landscape matters?

No.

How are design/plant standards enforced?

No instrument for enforcement in regulations.

Can you detect a difference between sites developed before/after adoption of landscape regulations?

Yes, but most recent development projects have been done by large developers who can usually be counted upon to do a good job regardless of regulations.

Do you ever negotiate with a developer for something other than that which the regulations specify?

Yes, with Board approval and only regarding subdivision/land development standards.

Is the result better or worse for this?

Better. Usually results in trade-offs that benefit both the public and the developer.

Do you have any criticism for the current regulatory language as it pertains to plants/plantings?

No.

Professional affiliations/inclinations of those who wrote, or assisted in writing, the landscape regulations in your township?

Planning consultant.

REGULATORY LANGUAGE

Purpose for required landscape plantings:

To safeguard the character of adjacent residential areas.

In parking lots: to provide maximum protection from the sun for vehicles.

Locations on a site where landscape plantings may be required:

buffers on property lines fronting less intense land use, off-street parking, street trees, designated open space

Do regulations encourage or require conservation of existing trees on a development site?

Yes.

Do regulations specify removal of construction rubble/debris, or any other site/soil preparations measures, before planting?

No.

Do regulations give a plant list?

Yes.

If yes, how appropriate and how restrictive?

Quite sophisticated. Suggested trees are, for the most part, tough and trouble-free. Gives matrix of suggested plants for buffers. List is not restrictive and developer may propose additional species.

Do regulations give planting or nursery stock specifications.

Yes. Specifies conformity with AAN nursery stock standards for bufferyards and street trees.

Any mention of aesthetics in regulatory language?

No.

Do regulations require maintenance of plantings?

Yes, for designated open space only.

SITE INFORMATION

Site: *Rosemont Business Campus*

Zoned: *CO: Commercial Office*

Purpose of district is to "serve as a transition between commercial and residential areas."

Applicable zoning language:

Section 135.49 - landscaped grounds and suitable screening

Applicable subdivision/land development language:

Section 120.38 - off street parking

Section 120.47 - street trees

Section 120.49G - existing trees and land forms

Section 120.51 - bufferyards

Purpose given in regulations for landscape planting(s) on site:

*maximum protection from sun for vehicles on lot
and to safeguard character of residential
areas*

Degree of compliance with township regulations:

High. Exceeds standards.

Are plantings effective in achieving purposes stated in regulations?

Judgement is difficult as plantings are still less than a year old. Site design fails to safeguard character of residential areas. (Architecture also does little to fulfill that purpose of the district.)

Are species used appropriate for site conditions?

Yes, excepting the birches.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Plantings seem to receive much attention.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf (hydromulched)

SHRUBS:

Cotoneaster apiculatus

Juniperus hortionalis

Pinus mugo

Rhododendron catawbiense hybrids

Rhododendron sp. (azalea)

Taxus x media

Viburnum rhytidophyllum

TREES:

Acer rubrum (fastigate form)

Betula papyrifera

Cedrus atlantica 'Glaucua'

Cornus kousa

Magnolia virginiana

Pinus strobus

Prunus sp.

Pyrus calleryana

Quercus rubra

Quercus sp. (existing)

Tilia americana (existing)

COMMENTS:

- brand new development - phases still under construction
- narrow strips of lawn in parking lot islands
constitute a maintenance problem
- plantings around building nicely done, but quite residential in flavor and in too
small a scale for the architecture.
- fence and viburnum screen against residential
property
- berm planting faces road

SITE INFORMATION

Site: *Kravco*

Zoned: *PB: Planned Business*

Applicable zoning language:

*Section 135.66 - buffer strip along rear and side
property lines that abut residential district*

Applicable subdivision/land development language:

Section 120.38 - off street parking

Section 120.49G - existing trees and land forms

Section 120.51 - bufferyards

Purpose given in regulations for landscape planting(s) on site:

maximum protection from sun for vehicles on lot

Degree of compliance with township regulations:

High. Site appears to meet standards.

Are plantings effective in achieving purposes stated in regulations?

Judgement difficult because plantings are quite new. It appears that plantings, thus far, fail to afford maximum protection to vehicles on lot.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Debris and litter removed; site is immaculate. Plants well cared-for.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

SHRUBS:

Euonymus alatus

TREES:

Crataegus crus-galli (multi-stemmed)

Pyrus calleryana

Tilia cordata

COMMENTS:

-entire site presents a cold, sterile impression

-low maintenance landscape of grass and trees, although strips of grass on parking lot planting islands present a maintenance problem

-buffers around back and sides were installed by previous owner of property

SITE INFORMATION

Site: *Fidelity Court*

Zoned: *PL0: Planned Laboratory-Office*

Applicable zoning language:

*Section 135.70D - buffer plantings along property
and street lines abutting residential
districts*

Applicable subdivision/land development language:

Section 120.38 - off street parking

Section 120.49G - existing trees and land forms

Purpose given in regulations for landscape planting(s) on site:

*maximum protection from sun for vehicles on lot
and to safeguard character of residential
areas*

Degree of compliance with township regulations:

High. Exceeds standards.

Are plantings effective in achieving purposes stated in regulations?

Yes.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Site free of debris; plants seem to receive much attention.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

Euonymus fortunei

Hedera helix

Hemerocallis sp.

ferns

*Ameswood Program*SHRUBS:*Rhododendron catawbiense hybrids**Rhododendron sp. (deciduous azaleas)**Taxus x media*TREES:*Acer saccharum**Cornus kousa**Crataegus phaenopyrum**Gleditsia triacanthos**Picea abies**Quercus coccinea (existing)**Q. rubra (existing)*COMMENTS:*-trellis screens around front parking area w/ Wisteria sinensis is exemplary**-narrow strips of lawn in parking lot islands**constitute a maintenance problem*

SITE INFORMATION

Site: *Radnor Corporate Center*

Zoned: *PLO: Planned Laboratory-Office*

Applicable zoning language:

*Section 135.70D - buffer plantings along property
and street lines abutting residential
districts*

Applicable subdivision/land development language:

Section 120.38 - off street parking

Section 120.49G - existing trees and land forms

Section 120.51 - bufferyards

Purpose given in regulations for landscape planting(s) on site:

*maximum protection from sun for vehicles on lot
and to safeguard character of residential
areas*

Degree of compliance with township regulations:

High. Exceeds standards.

Are plantings effective in achieving purposes stated in regulations?

Yes.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Author witnessed maintenance contractor blow-drying the lawn.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

Hedera helix

Vinca minor

SHRUBS:

Euonymus alatus

Forsythia x intermedia

Taxus cuspidata

TREES:

Acer rubrum

A. saccharum

Betula nigra

Liquidambar styraciflua

Magnolia virginiana

Malus sp.

Pinus strobus

P. nigra

Quercus phellos

Salix sp. (existing)

COMMENTS:

-much existing woodland

-large scale landscape with campus atmosphere

*Longwood Program***RADNOR TOWNSHIP ZONING REGULATIONS**

1. Article XI CO: Commercial Office
(Rosemont Business Campus)
2. Article XV PB: Planned Business
(Kravco)
3. Article XVI PLO: Planned Laboratory-Office
(Radnor Corporate Center and
Fidelity Court)
4. Zoning Ordinance Definition of Buffer Planting Strips

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- C. All off-street parking, loading, access facilities and service areas used by motor vehicles shall comply with the provisions of §§ 135-101, 135-102 and 135-103. Off-street parking and loading space shall be located immediately contiguous to each apartment house.
- D. All rooms shall comply with the provisions of § 135-40B(6), relating to minimum room size. A basement shall not contain habitable rooms except for janitor's living quarters, which shall be counted as a dwelling unit.

ARTICLE XI
CO Commercial-Office District

§ 135-46. Purpose of district; application of regulations.

CO Commercial-Office Districts are designed to make special provision for certain areas of the township which, by virtue of their location with regard to existing commercial and residential areas, properly can serve as a transition between such areas. In CO Commercial-Office Districts the regulations contained in this Article shall apply.

§ 135-47. Use regulations.

A building may be erected or used and a lot may be used or occupied for any of the following purposes, provided that the use and conversion of any existing dwelling shall comply with the provisions of §§ 135-50 and 135-99:

- A. Office or studio, not involving characteristics normally associated with retail activities on the premises.
- B. Bank or similar financial institution, to include a security-vault storage building. [Amended 9-22-80 by Ord. No. 80-21]
- C. Business school but not trade school.
- D. Private kindergarten or child nursery.
- E. Club for social, fraternal, civic, cultural or educational purpose, operated on a membership basis by a nonprofit organization, provided that:

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- (1) The chief activity permitted shall be noncommercial, nonprofit and clearly one not customarily carried on as a business.
- (2) Each building or facility devoted to such use shall be primarily for the use of members and their guests.
- (3) Eating and dining accommodations, if any, shall be incidental to the social, fraternal, civic, cultural or educational purpose of the club.

F. Dormitory or rooming facility for students of an educational institution, provided that:

- (1) Such facility shall be located not more than one-half ($\frac{1}{2}$) mile from the institution which it serves.
- (2) No such facility shall house more than twenty (20) persons.

G. Convalescent home, nursing home or similar use, subject to the provisions of § 135-74F.

H. Post office, telephone central office, including office open to the general public, or any other governmental or public-service use, as permitted in § 135-72E.

I. Accessory uses may include:

- (1) A playfield or recreational facility in conjunction with a permitted main use.
- (2) Living accommodations or sleeping quarters for watchmen, caretakers or the staff or employees of a permitted institution, provided that no such living accommodation or sleeping quarters shall be located on the first floor of a building devoted to office or business use.
- (3) Signs, as permitted in Article XXI.

§ 135-48. Area and height regulations.

A. Lot area. Every lot on which a building is erected or used shall have a minimum lot or tract size dependent on the number of stories per building, as follows:

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- (1) Two (2) stories or less: not less than twenty thousand (20,000) square feet.
- (2) Three (3) stories: not less than thirty thousand (30,000) square feet.
- B. Lot width. Every lot shall have a lot width at the building line of not less than one hundred (100) feet.
- C. Building area. Not more than twenty percent (20%) of the area of each lot may be occupied by buildings.
- D. Building placement. No building shall be located less than sixty-five (65) feet from a street right-of-way line, less than twenty (20) feet from a side property line nor less than twenty-five (25) feet from a rear property line.
- E. Height. No building shall exceed three (3) stories or forty (40) feet in height.

§ 135-49. Special regulations.

In addition to the applicable provisions of the other regulations of this chapter, the following specific regulations shall apply:

- A. Every permitted use shall provide and maintain landscaped grounds and/or make any other suitable screening provision which is necessary to safeguard the character of adjacent residential districts. and each building shall be designed and maintained so as to minimize its commercial appearance and to afford minimum evidence of the nature of the operation conducted therein. All planting shall comply with the provisions of the Radnor Township Subdivision Ordinance.¹
- B. No products or goods shall be publicly displayed on the exterior of the premises nor from show windows in the buildings.
- C. If there is more than one (1) building on a lot, the minimum distance between any two (2) buildings shall be twenty (20) feet.

¹ Editor's Note: See Ch. 120, Subdivision of Land.

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- D. The off-street parking, off-street loading and special requirements relating to highway frontage prescribed in §§ 135-101, 135-102 and 135-103 shall apply in CO Commercial-Office Districts.

§ 135-50. Conversion of dwelling to nonresidence use.

No dwelling shall be converted to a nonresidence use except in accordance with provisions of this section, subject also to the general standards prescribed in § 135-123. The Zoning Hearing Board may authorize as a special exception the conversion of any dwelling existing at the effective date of this chapter to any nonresidence use permitted in the district, provided that:

- A. The proposed use shall comply with the yard, area, off-street parking and other requirements covering office or commercial use in the district insofar as practicable.
- B. No existing yards or required open spaces shall be reduced to less than the requirements of this district governing a permitted use.
- C. No living accommodation or sleeping quarters shall be authorized except such accessory use as is permitted in the district.
- D. The proposed reconstruction and conversion shall be in keeping with the predominant character of the district and shall not detract from the use of an adjoining property for any permitted use.

ARTICLE XII

C-1 Local Commercial District

§ 135-51. Purpose of district; application of regulations.

C-1 Local Commercial Districts provide for the special requirements of retail convenience-type commercial establishments which serve primarily the day-to-day needs of the immediately surrounding neighborhood, and encourage attractive, compact retail commercial development in locations close to the

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ARTICLE XV
PB Planned Business District

§ 135-63. Purpose of district; application of regulations.

A. PB Planned Business Districts are designed to make special provisions for the requirements of the modern, well-

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planned, integrated shopping and business district. Among other things, the district regulations:

- (1) Require that the district be developed as a group or groups of properly related business and compatible facilities comprising a single architectural scheme with appropriate landscaping, and
- (2) Contain a comprehensive set of design requirements governing such things as access, land use, building placement, building coverage, highway protection, off-street parking, buffering and screening.

B. PB Districts may be established and developed only in accordance with the special provisions of § 135-114 and subject to the regulations of this Article and any other pertinent provisions of this chapter.

C. In PB Planned Business Districts, the regulations contained in this Article shall apply.

§ 135-64. Use regulations.

A building or a unified group of buildings may be erected or used and a lot may be used or occupied for any of the following purposes:

- A. A planned neighborhood or community shopping center, including the following uses as part of an integrated retail business development:
 - (1) Retail store.
 - (2) Office or studio.
 - (3) Clothes-cleaning-and-pressing pickup agency, including automatic self-service laundry.
 - (4) Any use permitted in C-1 Local Commercial Districts, provided that any processing activity in conjunction with a custom shop or other permitted use shall comply with the provisions of § 135-52D.

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B. The following additional uses when specifically authorized in conjunction with the total development of a Planned Business District not less than twenty (20) acres in size for any use or combination of uses and their proposed location shall be consistent with a plan for the overall development of the tract approved in accordance with the provisions of § 135-114:

- (1) Office building.
- (2) Motel, hotel or inn, provided such use clearly is designed so as to constitute a logical and harmonious element of the overall development plan for the district.
- (3) Indoor place of amusement or recreation, including theater or bowling alley.
- (4) Community or civic center building or use, including library.
- (5) Scientific or industrial research, testing or experimental laboratory or similar establishment for research or product development, provided there is no commercial production or storage of any commodity or substance except for storage necessary for scientific research.
- (6) Business school.
- (7) Automobile accessories store (not including service station) or sales agency as part of a retail shopping center.
- (8) Publishing or job-printing establishment.
- (9) Any use of the same general character as any of the above permitted uses.

C. Accessory uses may include:

- (1) Storage within a completely enclosed building in conjunction with a permitted use.
- (2) Living quarters for watchmen, caretakers or the staff or employees of a permitted institution.

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(3) Signs as permitted in Article XXI.

§ 135-65. Area and height regulations.

- A. Lot area. The area of the lot or tract which is developed shall be not less than three (3) acres, except as is otherwise provided in § 135-64B above.
- B. Building area. Not more than twenty percent (20%) of the total area of the lot or tract devoted to a permitted use may be occupied by buildings.
- C. Building placement. No building shall be located less than one hundred (100) feet from a street right-of-way or other property line, and no parking, loading or service area shall be located less than fifty (50) feet from a street right-of-way or other property line.
- D. Height regulations. No building shall exceed two (2) stories nor be more than thirty (30) feet in height, except that an office building shall not exceed three (3) stories nor be more than forty (40) feet in height. [Amended 8-7-78 by Ord. No. 78-19]

§ 135-66. Special development regulations.

- A. In addition to the requirements of this chapter, the plan for the proposed development shall comply with the special standards of the Radnor Township Subdivision Ordinance¹ relating to a shopping center or a group of business uses on a lot.
- B. Any application for development under the terms of this Article shall provide initially at least for the construction of either a minimum of twenty thousand (20,000) square feet of ground floor area or a minimum of ten (10) of the permitted main uses.
- C. No permanent storage of merchandise, articles or equipment shall be permitted outside a building, and no goods, articles or equipment shall be stored, displayed or offered for sale beyond the front lines of a building

¹ Editor's Note: See Ch. 120, Subdivision of Land.

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- D. Along each side or rear property line which directly abuts a residence district in the township, or a similar district in an adjoining municipality, a buffer planting strip of not less than thirty (30) feet in depth, as defined in § 135-4B, shall be provided. Along each street line bounding a residence district, a strip of land not less than twenty (20) feet in depth shall be suitably landscaped except for necessary sidewalks and accessways crossing the strip.
- E. All off-street parking, loading, access facilities and service areas used by motor vehicles shall comply with the provisions of §§ 135-101, 135-102 and 135-103.

ARTICLE XVI

PLO Planned Laboratory-Office District

§ 135-67. Purpose of district; application of regulations.

- A. PLO Planned Laboratory-Office Districts are designed primarily to provide for selected modern laboratory and office establishments which:
 - (1) Provide for attractive large-site, low-lot-coverage development in areas where traditional business development would be inappropriate.
 - (2) Strengthen and diversify the township's tax base.
 - (3) Are compatible with the character of surrounding areas.
- B. PLO Districts may be established and developed only in accordance with the special provisions of § 135-114 and subject to the regulations of this Article and any other pertinent provisions of this chapter.
- C. In PLO Planned Laboratory-Office Districts, the regulations contained in this Article shall apply.

§ 135-68. Use regulations.

A building or unified group of buildings may be erected or used and a lot may be used or occupied for any of the following purposes.

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- A. Scientific or industrial research, testing or experimental laboratory or similar establishment for research or product development, provided that there is no commercial production or storage of any commodity or substance except for storage necessary for scientific research.
- B. Office building.
- C. Accessory uses may include:
 - (1) Storage within a completely enclosed building in conjunction with a permitted use.
 - (2) A cafeteria or other service facility located within the building and operated for the exclusive use of occupants of the building.
 - (3) A recreational area for occupants.
 - (4) Living quarters for watchmen, caretakers or similar employees.
 - (5) Signs as permitted in Article XXI.

§ 135-69. Area and height regulations.

- A. Lot area and width. Every lot on which a building or combination of buildings is hereafter erected or used shall have a lot area of not less than ten (10) acres, and such lot shall be not less than three hundred (300) feet in width at the building line.
- B. Building area. Not more than thirty percent (30%) of the area of any lot may be occupied by buildings, and a total of not more than sixty percent (60%) of the area of any lot may be occupied by buildings and parking areas.
- C. Building placement. No building shall be located less than one hundred fifty (150) feet from a street right-of-way line nor less than seventy-five (75) feet from a side or rear property line, and no parking, loading or service area shall be located less than fifty (50) feet from a street right-of-way or other property line.

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- D. Height regulations. No building shall exceed two (2) stories or be more than thirty (30) feet in height, except that an office building shall not exceed three (3) stories or be more than forty (40) feet in height. [Amended 8-7-78 by Ord. No. 78-19]

§ 135-70. Special development regulations.

- A. In addition to the requirements of this chapter, the plan for the proposed development shall comply with the special standards of the Radnor Township Subdivision Ordinance¹ relating to a use or a group of uses on a lot.
- B. Each building shall be designed so as to minimize its commercial appearance and shall, insofar as practicable, afford minimum external evidence of the nature of the operation conducted therein.
- C. No products or goods shall be publicly displayed on the exterior of the premises.
- D. Along each side or rear property line which directly abuts a residence district in the township, or a similar district in an adjoining municipality, a buffer planting strip of not less than thirty (30) feet in width, as defined in § 135-4B, shall be provided. Along each street line bounding a residence district, a strip of land not less than fifty (50) feet in width shall be suitably landscaped except for necessary sidewalks and accessways crossing the strip.
- E. All off-street parking, loading, access facilities and service areas used by motor vehicles shall comply with the provisions of §§ 135-101, 135-102 and 135-103.

ARTICLE XVII

I Institutional District

§ 135-71. Purpose of district; application of regulations.

- A. I Institutional Districts are designed to provide for special needs of large, regionally oriented institutional uses.

¹ Editor's Note: See Ch. 120, Subdivision of Land.

RADNOR TOWNSHIP

SUBDIVISION AND LAND DEVELOPMENT REGULATIONS

1. Section 120.38 Parking Facilities - Landscaping
2. Section 120.47 Street Trees
3. Section 120.51 Buffer Yards

§120-38. Parking Facilities - Landscaping.

All parking areas shall have at least one (1) tree of 1 1/2 inch minimum caliper for every five (5) parking spaces in single bays and one (1) tree of 1 1/2 inch minimum caliper for every ten (10) parking spaces in double bays. Trees shall be planted in such a manner to afford maximum protection from the sun for parked vehicles. A minimum of ten (10) percent of any parking lot facility over two thousand (2,000) square feet in gross area shall be devoted to landscaping, inclusive of required trees.

Plantings shall be able to survive soot and gas fumes. Trees which have low growing branches, gum or moisture which may drop on vehicles, blossoms, thorns, seeds, or pods which may clog drainage facilities shall be avoided.

§120-39. Design and Layout of Off-Street Loading Facilities.

Off-street loading facilities shall be designed to conform to the following specifications.

A. Each space shall be no less than fourteen (14) feet wide, sixty (60) feet long, and seventeen (17) feet high, exclusive of drives and maneuvering space, and located entirely on the lot being served.

B. There shall be appropriate means of access to a street or alley as well as adequate maneuvering space.

C. The maximum width of driveways and sidewalk openings measured at the street lot line shall be thirty-five (35) feet; the minimum width shall be twenty (20) feet.

D. All accessory driveways and entrance ways shall be graded, have a bituminous surface, and be drained to the satisfaction of the Township Engineer to the extent necessary to prevent nuisances of dust, erosion, or excessive water flow across public streets or sidewalks.

E. Such facilities shall be designed and used in such a manner as to at no time constitute a nuisance, a hazard, or an unreasonable impediment to traffic.

F. The lighting requirements of §120-37(S) shall be met if applicable.

§120-40. Grading and Drainage.

A. Provisions for the control of surface water should, if possible, be constructed to encourage percolation of the water into the ground to aid in the recharge of ground waters.

B. Blocks and lots shall be graded to secure proper drainage away from buildings and to prevent the collection of storm water in pools.

C. All drainage provisions shall be of such design as to carry surface waters to the nearest practical and adequate street storm drain, retention basin, natural watercourse, or other drainage facility.

D. The subdivider or developer shall construct and/or install such drainage structures and/or pipes as are necessary to prevent erosion damage and to satisfactorily carry off, or retain and release, surface waters.

E. No fill shall be made which creates any exposed surface steeper in slope than two horizontal to one vertical, except under one or more of the following conditions:

(1) The fill is located so that settlement, sliding, or erosion will not result in property damage or be a hazard to adjoining property, streets, alleys, or buildings.

(2) A written statement from an engineer experienced in erosion control, certifying that he has inspected the site and that the proposed deviation from the slope specified above will not endanger any property or result in property damage, is submitted to and approved by the Township Engineer.

(3) A concrete or stone masonry wall constructed in accordance with approved standards is provided to support the face of the excavation.

F. The top or bottom edge of slopes shall be a minimum of three (3) feet from property or right-of-way lines of streets or alleys in order to permit the normal rounding of the edge without encroaching on the abutting property.

G. Storm drains and appurtenances shall be required to be constructed by the owner to take surface water from the bottom of vertical grades, to lead water away from springs, and to avoid excessive use of cross gutters at street intersections and elsewhere.

H. Unless otherwise directed by the Board of Commissioners and the Pennsylvania Department of Environmental Resources, water courses shall remain open and shall not be piped or incorporated into a storm sewer system.

I. Detention and retention basins shall be designed to utilize the natural contours of the land whenever possible. When such design is impracticable, the construction of the basin shall utilize slopes as shallow as possible to blend the structures into the terrain.

\$120-41. Erosion and Sediment Controls.

A. No changes shall be made in the contour of the land and no grading, excavation, removal, nor destruction of the topsoil, trees, or other vegetative cover of the land shall be commenced, until such time that a plan for minimizing erosion and sedimentation has been processed and reviewed by the Township Engineer and the Delaware County Conservation District. The Board of Commissioners may waive this requirement for minor subdivisions.

B. No subdivision or land development plan shall be approved unless:

(1) There has been an erosion and sedimentation plan approved by the Township Engineer that provides for minimizing erosion and sedimentation consistent with the Radnor Township Grading Ordinance and an improvement bond or other acceptable security is deposited with the Township in the form of an escrow guarantee which will ensure installation and completion of the required improvements; or

(2) There has been a determination by the Board of Commissioners that a plan for minimizing erosion and sedimentation is not necessary.

C. Measures used to control erosion and reduce sedimentation shall as a minimum meet the standards and specifications of the Delaware County Conservation District. The Township Engineer shall ensure compliance with the appropriate specifications, copies of which are available from the District.

D. The Board of Commissioners in its consideration of all preliminary plans of subdivision and land development shall condition its approval upon the execution of erosion and sediment control measures as contained in the Radnor Township Grading Ordinance.

E. Final approval of plans and specifications for the control of erosion and sedimentation shall be concurrent with the approval of the final subdivision or land development plans, and become a part thereof.

F. The Township Engineer shall review stream channel construction on watersheds with a drainage area in excess of 320 acres, or in those cases where downstream hazards exist, and shall submit a review of said construction to the Pennsylvania Department of Environmental Resources. Said construction shall be approved by the Pennsylvania Department of Environmental Resources prior to final plan approval.

G. Final Plans for minimizing erosion and sedimentation as approved will be incorporated into the agreement and bond requirements as required by the Township (see Article X).

\$120-42. Blocks.

A. The length, width, and shape of blocks shall be determined with due regard to the following:

(1) Provision of adequate sites for types of buildings proposed.

(2) Zoning requirements as to lot sizes, dimensions, and minimum lot areas per dwelling unit.

(3) The limitations and opportunities of the topography.

(4) Requirements for safe and convenient vehicular and pedestrian circulation and access.

B. Blocks shall have a maximum length of sixteen hundred (1600) feet and a minimum length of three hundred (300) feet. In the design of blocks longer than eleven hundred (1100) feet, special consideration shall be given to the requirements of satisfactory fire protection.

§120-43. Lots.

A. Lot dimensions and areas shall be not less than specified by the Zoning Ordinance.

B. Residential lots shall front on an existing or proposed street.

C. Through lots are prohibited, except where employed to prevent vehicular access to arterial and collector streets.

D. Side lot lines shall be substantially at right angles or radial to street lines.

E. The depth of single-family detached residential lots shall not be less than one (1) nor more than two and one half (2 1/2) times their width.

F. If remnants of land exist after subdividing, they shall be incorporated into existing or proposed lots, or dedicated to public use of recreation or open space, if acceptable to the Township.

G. The subdivision of a tract which creates non-conforming side and rear yards for existing buildings will not be approved unless variances have been granted by the Zoning Hearing Board prior to Final Plan submission.

§120-44. Easements.

A. Easements with a minimum width of twenty (20) feet shall be provided as necessary for utilities.

B. To the fullest extent possible, easements shall be adjacent to rear or side lot lines.

C. No structure requiring a building permit or plantings, except for lawn and/or paving shall be set or put within the area of a utility easement.

D. Where a subdivision or land development is traversed by a watercourse, there shall be provided a drainage easement or right-of-way conforming substantially with the line of such watercourse and of such width as will be adequate to preserve natural drainage but not less than fifty (50) feet, or as may be required or directed by the Township and/or the Department of Environmental Resources. The owner shall properly grade and seed slopes and fence any open ditches when it is deemed necessary by the Township.

E. Where storm water or surface water will be gathered within the subdivision or land development and discharged or drained without being detained over lands within or beyond the boundaries of the subdivision or land development, the applicant or owner shall reserve or obtain easements over all lands affected thereby, which easements shall be adequate for discharge, or drainage and for carrying off of such water, and for the maintenance, repair and reconstruction of the same, including the right of passage over and upon the same by vehicles, machinery and other equipment for such purposes, and which shall be of sufficient width for such passage and work. The owner shall convey, free of charge or cost, such easements to the Township upon demand.

§120-45. Curbs.

A. Curbs shall be provided along streets when required by the Township.

§120-46. Sidewalks and Pedestrian Paths.

A. Sidewalks and pedestrian paths shall minimize pedestrian-vehicular conflict and shall be provided when required by the Board of Commissioners.

B. The minimum width of all sidewalks and pedestrian paths shall be four (4) feet.

C. Sidewalks and public paths shall be located within a public right-of-way, a public easement, or a common open space area.

D. Curb cuts shall be provided at all street crossings.

E. Sidewalks and pedestrian paths shall be adequately lighted, if required by the Board of Commissioners.

F. The grades and paving of sidewalks and pedestrian paths shall be continuous across driveways. Where heavy traffic volume is expected, a special paving treatment may be required by the Board of Commissioners.

G. Sidewalks and pedestrian paths shall be laterally pitched at a slope of not less than one-quarter (1/4) inch per foot to provide for adequate surface drainage.

H. Sidewalks and pedestrian paths shall not exceed a seven (7) percent grade. Steps or a combination of steps and ramps shall be utilized to maintain the maximum grades, where necessary. Where sidewalk grades exceed five (5) percent, a non-slip surface texture shall be used.

I. Sidewalks and pedestrian paths shall be of a hard surface composition if heavy pedestrian or bicycle traffic will be served and shall be constructed according to Township specifications. An occasionally utilized footpath may utilize gravel, pine bark chips, or other material approved by the Board of Commissioners.

J. Sidewalks adjacent to angle parking areas shall be set back a minimum of five (5) feet to prevent car overhang from restricting pedestrian movement along the sidewalk.

§120-47. Street Tree Planting.

A. Within any land development or major subdivision, street trees shall be planted along all streets where suitable street trees do not exist.

B. Large street trees shall be planted at intervals of not more than forty-five (45) feet, and small street trees at intervals of not more than thirty (30) feet along both sides of new streets and along one or both sides of an existing street within the proposed subdivision or land development. An equivalent number may be planted in an informal arrangement, subject to the approval of the Board of Commissioners.

C. Street trees shall not be planted opposite each other, but shall alternate.

D. At intersections, trees shall be located no closer than fifty (50) feet from the intersection of the street rights-of-way.

E. Street trees shall be planted on lots rather than within the right-of-way, unless otherwise approved by the Board of Commissioners.

F. Street trees shall be of nursery stock. They shall be of symmetrical growth, free of insects, pests and disease, suitable for street use, and in conformity with the standards of the American Association of Nurserymen.

G. The minimum caliper measured at a height of six (6) inches above the finished grade level, shall be two and one half (2 1/2) inches.

H. In particular, approved trees including the following:

- (1) *Acer ginnala* - Amur Maple
- (2) *Acer saccharum* - Sugar Maple
- (3) *Acer saccharum columnaris* - Columnar Sugar Maple
- (4) *Acer rubra columnaris* - Columnar Red Maple
- (5) *Crateagus phaenopyrum* - Washington Hawthorne
- (6) *Fraxinus americana* - White Ash
- (7) *Fraxinus pennsylvanica lanceolata* - Green Ash
- (8) *Ginkgo biloba* - Ginkgo (male)
- (9) *Gleditsia tricanthos inermis* - Moraine Locust

Longwood Program

- (10) Koelreuteria paniculata - Golden Rain Tree
- (11) Liquidambar styraciflua - Sweet Gum
- (12) Phellodendron amurense - Amur Cork Tree
- (13) Plantanus acerifolia - London Plane Tree
- (14) Prunus kwansan - Kwansan Cherry (upright form)
- (15) Pyrus calleryana bradford - Bradford Pear
- (16) Quercus borealis - Red Oak
- (17) Quercus coccinea - Scarlet Oak
- (18) Quercus phellos - Willow Oak
- (19) Tilia cordata - European Linden
- (20) Zelkova serrata - Japanese Zelkova

Upon the approval of the Board of Commissioners, other species may be utilized.

\$120-48. Crosswalks.

A. Interior crosswalks may be required whenever necessary to facilitate pedestrian circulation and to give access to community facilities in blocks of over one thousand (1,000) feet in length.

B. Such crosswalks shall have an easement width of not less than twenty (20) feet and a paved walk of not less than four (4) feet. They shall be clearly marked by bollards, paving material, signing, lights, or similar provisions to insure their visibility to motorists.

\$120-49. Multi-family and Attached Dwelling Residential Development.

A. Approval of the Preliminary Plan must be obtained for the entire proposed development. Final approval may be obtained section by section, but such sections shall be specified on the Preliminary Plan and must be numbered in the proposed order that they are to be developed. Such order of development must be adhered to, and if changes are required plans must be resubmitted and processed pursuant to Article IV.

B. Attached dwelling types should incorporate varied designs, architectural modes and setbacks.

C. Access and Circulation

(1) Access to the dwellings and circulation between buildings and other important project facilities for vehicular and pedestrian traffic shall be comfortable and convenient for the occupants.

(2) Access and circulation for fire-fighting and other emergency equipment, moving vans, fuel trucks, garbage collection, deliveries, and snow removal shall be planned for efficient operation and convenience.

(3) Walking distance from the main entrance of a building or single-family dwelling unit to a parking area shall be less than one hundred (100) feet. Exceptions to this standard shall be reasonably justified by compensating advantages, such as desirable views and site preservation through adaption to topography. In no case shall the distance exceed two hundred and fifty (250) feet.

D. Grading

(1) Grading shall be designed for buildings, lawns, paved areas, and other facilities to assure adequate surface drainage, safe and convenient access to and around the buildings, screening of parking and other service areas, and conservation of desirable existing vegetation and natural ground forms.

(2) Grading around buildings shall be designated to be in harmony with natural topography.

E. Driveways

(1) Driveways shall be provided on the site where necessary for convenient access to dwelling units, garage compounds, parking areas, service entrance of buildings, collection of refuse, and all other necessary services. Driveways shall enter public streets at safe locations.

(2) Driveways shall be planned for convenient circulation suitable for traffic needs and safety.

(3) All driveways shall be paved and constructed in accordance with Township standards.

F. Refuse Collection Stations

(1) Outdoor collection stations shall be provided for garbage and trash removal when individual collection is not made and indoor storage is not provided.

(2) Collection stations shall be located so as to be separated adequately from habitable buildings to avoid being offensive, but at the same time be convenient for both collectors and residents and shall be adequately screened and landscaped.

(3) If public collection is anticipated, the containers and the placement thereof shall be subject to the approval of the Township Engineer.

C. Planting

The appeal and character of the site shall be preserved and enhanced by retaining and protecting existing trees and desirable topographic features. Additional plant material shall be added for privacy, shade, beauty of buildings and grounds, and to screen out objectionable features.

§120-50. Non-Residential Developments.

A. The platting of individual lots for non-residential uses shall be avoided in favor of a comprehensive design of the land to be used for such purposes.

B. Additional width of streets adjacent to areas proposed for non-residential use may be required as deemed necessary by the Board of Commissioners to assure the free flow of through-traffic from vehicles entering or leaving parking and loading areas.

C. When two (2) adjacent lots proposed for non-residential uses front on an arterial or major collector street, the applicant may be required to provide common ingress and egress as well as common parking facilities. When three (3) or more adjacent lots are proposed for non-residential uses, the applicant may be required to provide a service road for common ingress and egress.

D. Alleys or service streets shall be required in commercial and industrial land developments, except where adequate provisions are made for off-street loading.

E. Dead-end alleys shall be avoided; but where this proves impossible, they shall be terminated with a paved turn-around of adequate dimensions as approved by the Board of Commissioners.

F. Streets shall not be connected to local streets intended for predominantly residential traffic.

G. Parking areas shall be located and designed in such a manner that they are visibly secluded from eye level in the surrounding area. Grading to depress the parking area, raised berms, landscaping, or fencing are satisfactory methods to create such seclusion.

H. Outdoor collection stations shall be provided for garbage and trash removal when indoor collection is not provided. Collection stations shall be screened from view and landscaped.

§120-51. Buffer Yards.

A. Buffer yards are required between subdivisions and land developments and along existing streets to soften visual impact, to screen glare, and to create a visual barrier between conflicting land uses. The extent of

buffering required shall be determined by the type of use proposed and the adjacent uses or streets surrounding the proposed development. The impact of the proposed use on adjoining properties is the basis for establishing buffer yard standards.

B. To determine the required buffer yard and planting schedule, the following three step procedure shall be adhered to:

Step 1 - Site Analysis and Determination of Buffer Yard Class.

For each property boundary, the applicant shall determine the adjacent land use or street classification for each property boundary. The letter indicates the buffer yard class.

TABLE 1:
DETERMINATION OF
BUFFER YARD CLASS

	ADJACENT LAND USE									VACANT LAND			ADJACENT STREET CLASSIFICATION				
	Single-family Detached	Planned Cluster Development	Multi-family	Institutional	Office	Retail & Consumer Service	Utilities, Public Service	Industrial	Non-Residential Off-Street Parking	A-1, A-2, R-1, R-2, R-3, R-4, R-5 & PA Districts	CO, C-1, C-2, C-3, & PB Districts	PLO & I Districts	Expressway	Arterial	Major Collector	Minor Collector	Local/Court
PROPOSED LAND USE	Single-family Detached	-	-	-	-	-	-	-	B	-	-	-	B	B	A	A	*
	Planned Cluster Development	-	-	A	B	B	B	B	B	-	-	A	B	B	A	A	*
	Multi-family	A	A	-	B	B	B	B	B	A	A	A	B	B	A	A	*
	Institutional	B	B	B	-	-	A	A	A	B	-	-	B	A	A	A	*
	Office	B	B	B	-	-	-	-	A	B	-	-	B	*	*	*	*
	Retail & Consumer Service	B	B	B	A	-	-	-	A	B	-	-	B	*	*	*	*
	Utilities, Public Service	B	B	B	A	-	-	-	A	B	-	-	B	*	*	*	*
	Industrial	B	B	B	A	-	-	-	-	B	-	-	A	*	*	*	*
	Non-Residential Off-Street Parking	B	B	B	B	A	A	A	-	B	-	-	A	A	A	A	A
PROPOSED STREET	Expressway	B	B	B	B	B	*	*	A	A							
	Arterial	B	B	B	A	*	*	*	A								
	Major Collector	A	A	A	A	*	*	*	A								
	Minor Collector	A	A	A	A	*	*	*	A								
	Local/Court	*	*	*	*	*	*	*	A								

*Street trees as required by §120-47.

Step 2 - Selection of the Planting Option for the Buffer Class.

After determining the buffer class, the applicant shall select a planting option from Table 2. For each buffer class, several planting options are available, one of which the applicant shall select to meet the buffer yard requirement for each boundary. The Board of Commissioners may permit an alternative planting option which shall have a screening capability equal to or greater than any of the available options.

TABLE 2: PLANTING OPTIONS

The options below indicate the amount of plant material that is required per linear foot of property line. Unless stated below, plantings are required to be aligned on property or right-of-way boundaries but may be sited on any portion of the property for buffering, if permitted by the Board of Commissioners. Plant materials shall be so arranged to allow for proper growth and to provide the buffering intended herein. All buffers shall have a minimum width of ten (10) feet, unless otherwise specified in the Zoning Code.

CLASS	OPTION
A	(1) 1 canopy tree per 40 feet along boundary line + 1 flowering tree per 60 feet } informally arranged + 1 evergreen per 60 feet }
	(2) 1 canopy tree per 40 feet } informally arranged + 1 evergreen per 30 feet }
B	(1) 1 evergreen per 8 feet, informally arranged
	(2) 1 evergreen per 15 feet with 4 foot high berm
	(3) 1 evergreen per 15 feet } informally arranged + 1 evergreen shrub per 8 feet }
	(4) 1 evergreen per 10 feet } informally arranged + 1 shrub per 4 feet }
	(5) hedgerow on property line (3 foot centers)

Step 3 - Selection of Plant Materials from the Plant Materials List.

Each planting option may utilize any of the plant materials outlined in Table 3. Minimum plant size given either in height or in caliper is indicated on this table. The Board of Commissioners may permit other planting types if they are hardy to the area, are not subject to blight or disease, and are of the same general character and growth habit as those listed in Table 3. All planting material shall meet the standards of the American Association of Nurserymen.

The applicant shall not be required to provide a buffer yard should existing planting, topography, or man-made structures on the subject property be deemed acceptable for screening purposes by the Board of Commissioners.

TABLE 3: PLANT MATERIALS LIST

(1) Canopy Tree (1 1/2 inch caliper)

Acer ginnala - Amur Maple
Acer plantanoides - Norway Maple
Acer rubrum - Red Maple
Acer saccharum - Sugar Maple
Betula alba - European White Birch
Betula papyrifera - Paper Birch
Fagus grandifolia - American Beech
Fagus sylvatica - European Beech
Fraxinus americana - White Ash
Fraxinus pennsylvanica lanceolata - Green Ash
Ginkgo biloba - Ginkgo (male only)
Gleditsia triacanthos inermis - Thornless Honeylocust
Liquidambar styraciflua - Sweet Gum
Liriodendron tulipifera - Tulip Tree
Phellodendron amurense - Amur Cork Tree
Plantanus acerifolia - London Plane Tree
Quercus alba - White Oak
Quercus borealis - Red Oak
Quercus coccinea - Scarlet Oak
Quercus palustris - Pin Oak
Quercus phellos - Willow Oak
Robinia pseudoacacia inermis - Thornless Black Locust
Sophora japonica - Japanese Pagoda Tree
Tilia-Linden - all species hard to the area
Zelkova serrata - Japanese Zelkova

(2) Flowering Trees

<i>Amelanchier canadensis</i> - Shadblow Serviceberry	5-6 feet
<i>Cornus florida</i> - Flowering Dogwood	5-6 feet
<i>Cornus kousa</i> - Kousa Dogwood	5-6 feet
<i>Cornus mas</i> - Cornelian Cherry	5-6 feet
<i>Crataegus phaenopyrum</i> - Washington Hawthorn	5-6 feet
<i>Koelreuteria paniculata</i> - Golden Rain Tree	8-10 feet
<i>Laburnum vossii</i> - Goldenchain	1 1/4-1 1/2" caliper
<i>Magnolia soulangeana</i> - Saucer Magnolia	5-6 feet
<i>Magnolia virginiana</i> - Sweetbay	5-6 feet
<i>Malus baccata</i> - Siberian Crab	1 1/4-1 1/2" caliper
<i>Malus floribunda</i> - Japanese Flowering Crab	1 1/4-1 1/2" caliper
<i>Malus hopa</i> - Hopa Red-Flowering Crab	1 1/4-1 1/2" caliper
<i>Oxydendrum arboreum</i> - Sourwood	5-6 feet
<i>Prunus kwanzan</i> - Kwanzan Cherry	1 1/4-1 1/2" caliper
<i>Prunus yedoensis</i> - Yoshine Cherry	1 1/4-1 1/2" caliper
<i>Pyrus calleryana bradford</i> - Callery Pear	1 1/4-1 1/2" caliper

(3) Evergreens (4-5 feet)

Ilex opaca - American Holly
Picea abies - Norway Spruce
Picea omorika - Serbian Spruce
Picea pungens - Colorado Spruce
Pinus nigra - Austrian Pine
Pinus strobus - White Pine
Pinus thunbergi - Japanese Black Pine
Pseudotsuga taxifolia - Douglas Fir
Tsuga canadensis - Canada Hemlock
Tsuga caroliniana - Carolina Hemlock

(4) Hedgerow

<i>Crataegus crus-galli</i> - Cockspur Thorn	3-4 feet
<i>Crataegus phanopyrum</i> - Washington Hawthorn	3-4 feet
<i>Elaeagnus angustifolia</i> - Russian Olive	4-5 feet
<i>Euonymus alatus</i> - Winged Euonymus	3-4 feet
<i>Viburnum sieboldi</i> - Siebold Viburnum	4-5 feet
<i>Viburnum tomentosum</i> - Doublefile Viburnum	4-5 feet

(5) Evergreen Shrubs

<i>Juniperus virginiana</i> - Upright Juniper	4-5 feet
<i>Pyracantha lalandei</i> - Laland Firethorn	5-6 feet
<i>Taxus capitata</i> - Upright Yew	2 1/2-3 feet
<i>Taxus hicksi</i> - Hicks Yew	2 1/2-3 feet
<i>Thuja occidentalis</i> - American Arborvitae	4-5 feet

(6) Shrubs

<i>Euonymus alatus</i> - Winged Euonymus	3-4 feet
<i>Hamamelis vernalis</i> - Vernal Witch Hazel	4-5 feet
<i>Hamamelis virginiana</i> - Common Witch Hazel	4-5 feet
<i>Ilex verticillata</i> - Winterberry	4-5 feet
<i>Rhamnus frangula</i> - Glossy Buckthorn	4-5 feet
<i>Viburnum dentatum</i> - Arrowwood Viburnum	4-5 feet
<i>Viburnum lantana</i> - Wayfaringtree Viburnum	4-5 feet

\$120-52. Plotting of Recreation Areas.

Recreation areas shall be laid out in accordance with the best principals of site design. The recreation areas shall form part of an interconnecting open space system which extends throughout the development. The following criteria shall be utilized to determine whether the recreation areas have been properly designed:

A. Recreation areas shall be readily accessible to all development residents; or, in the case of recreation areas dedicated to the Township, shall be easily and safely accessible to the general public. At least one side of

Longwood Program

APPENDIX D

SPRINGFIELD TOWNSHIP CASE STUDY

TOWNSHIP MANAGER INTERVIEW

Township Manager: *Jim Fulginiti*

Date of Interview: *September 13, 1985*

Date current regulations effective:

Subdivision/Land Development: *1950*

Zoning: *1976*

landscape requirements adopted 1975

How are proposed designs/plants reviewed?

By Planning Commission.

Are there individuals on your Planning Commission or Zoning Hearing Board who are professionally qualified to review landscape plans?

Yes, Paul Meyer who is a Planning Commissioner and Director of Horticulture at the Morris Arboretum of the University of Pennsylvania.

If not, are there other individuals upon whom you rely for professional advice in routine landscape matters?

NA

How are design/plant standards enforced?

As needed. Some guidance and supervision from

Planning Commission, particularly Mr. Meyer.

Can you detect a difference between sites developed before/after adoption of landscape regulations?

Yes. Great improvement. As well, many sites that were developed under old regulations have voluntarily added plantings.

Do you ever negotiate with a developer for something other than that which the regulations specify?

Yes.

Is the result better or worse for this?

Better. More trees.

Do you have any criticism for the current regulatory language as it pertains to plants/plantings?

No. Still thrilled with overall improvement.

Professional affiliations/inclinations of those who wrote, or assisted in writing, the landscape regulations in your township?

Specifications written by Montgomery County Planning Commission staff, based on model ordinances & their own experience.

REGULATORY LANGUAGE

Purpose for required landscape plantings:

Zoning: to insure the preservation of existing trees and to provide an attractive natural setting.

Subdivision: to preserve and enhance the natural amenities of the Township; to avoid danger and congestion and to promote safety in vehicular traffic and parking areas; to provide buffer strips around parking areas and between non-complimentary commercial industrial and residential areas; to retard erosion, glare, and heat; to stimulate ground water recharge, air purification, and oxygen regeneration; to aid in noise abatement; and to provide that the effect of future development in the Township shall not unreasonably interfere with the enjoyment of neighboring properties or with the natural environmental setting that is one of the Township's chief assets.

Locations on a site where landscape plantings may be required:

open space, off-street parking, street trees,

*buffer strips along lot lines fronting
properties with less intense land use*

Do regulations encourage or require conservation of existing trees on a development site?

Yes. Where appropriately located.

Do regulations specify removal of construction rubble/debris, or any other site/soil preparations measures, before planting?

No.

Do regulations give a plant list?

No.

If yes, how appropriate and how restrictive?

Do regulations give planting or nursery stock specifications?

No.

Any mention of aesthetics in regulatory language?

Yes. "Attractive natural setting . . ."

Do regulations require maintenance of plantings?

No.

SITE INFORMATION

Site: *Wyndhill*

Zoned: *B: Residential*

Applicable zoning language:

Section 114.139A - Conversion of school buildings in residential neighborhoods.

Includes specifications for buffers, off-street parking, open space, and maintenance.

Applicable subdivision/land development language:

Section 95.11 - off-street parking and planting strips at lot lines

Purpose given in regulations for landscape planting(s) on site:

-to avoid danger and congestion in vehicular

traffic and parking areas

-see other purposes under "regulatory language"

Degree of compliance with township regulations:

High. Far exceeds standards.

Are plantings effective in achieving purposes stated in regulations?

Yes. They do help to maintain the character of the surrounding residential properties.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

Very high. Much attention to annual beds, pruning, debris removal.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

assorted annuals and perennials

Juniperus horizontalis

SHRUBS:*Ilex glabra**Pyracantha coccinea*TREES:*Cercidiphyllum japonicum**Koelreuteria paniculata**Liquidambar styraciflua**Picea abies**Pinus strobus**Prunus serrulata* 'Kwanzan'*Styrax japonica**Tsuga canadensis**Zelkova serrata*COMMENTS:*-nicely done**-grade school converted to office complex -
special zoning category**-very sensitive site because it's in the middle
of a residential area**-site succeeds at continuing the ambience
of a tree-lined residential street**-lower parking lot doubles as detention basin*

SITE INFORMATION

Site: *Chesney Commons*

Zoned: *B1: Business*

Applicable zoning language:

Section 114.105 - open space suitably landscaped

Applicable subdivision/land development language:

Section 95.11 - off-street parking

planting strips at lot lines

Section 95.12 - buffer strips where off street

parking abuts residential uses

Purpose given in regulations for landscape planting(s) on site:

-to avoid danger and congestion in vehicular

traffic and parking areas

-see other purposes under "regulatory language"

Degree of compliance with township regulations:

High. Exceeds standards.

Are plantings effective in achieving purposes stated in regulations?

Yes.

Longwood Program

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

*Yes, though wooden planters may not hold up to
traffic and snowplows.*

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

High. Much attention given to plantings.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

assorted annuals

turf

SHRUBS:

Euonymus alatus

Ilex glabra

Juniperus sp.

TREES:

Gleditsia triacanthos

Pyrus calleryana

Quercus rubra

COMMENTS:

-nicely done

-though of questionable durability, the wood planters and guard rails add much to the site

-landscape screen in back of property facing residential

SITE INFORMATION

Site: *K-Mart Shopping Center*

Zoned: *S: Shopping Center*

Applicable zoning language:

Section 114.112A - appropriate landscaping

Applicable subdivision/land development language:

Section 95.11 - off-street parking

planting strips at lot lines

Purpose given in regulations for landscape planting(s) on site:

-to avoid danger and congestion in vehicular

traffic and parking areas

-see other purposes under "regulatory language"

Degree of compliance with township regulations:

Moderate. Meets standards.

Are plantings effective in achieving purposes stated in regulations?

Yes and no. Plantings help to separate parking lot areas, but do little more.

Are species used appropriate for site conditions?

No. Use of dogwoods is questionable in this situation.

Is design of a durable nature?

*No. Planters not designed for car overhang;
plants damaged.*

Are plants alive and thriving?

No. Many are dead, dying, or damaged.

Level at which plantings are maintained?

Very low. Dead/dying plants not cared for; no removal of debris.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

turf

SHRUBS:

Euonymus alatus

Cotoneaster apiculatus

Ilex glabra

Taxus cuspidata

TREES:

Cornus florida

Gleditsia triacanthos

Pinus strobus

Pyrus calleryana

Pyrus sp. (purple leaf)

COMMENTS:

*-first site developed in Township under newly-adopted
landscape regulations*

SITE INFORMATION

Site: *Magnavox*

Zoned: *I: Industrial*

Applicable zoning language:

Section 112.124D - planting strips at lot lines

Applicable subdivision/land development language:

Section 95.11 - off- street parking and specifications for planting strips at lot lines

Purpose given in regulations for landscape planting(s) on site:

-to avoid danger and congestion in vehicular

traffic and parking areas

-see other purposes under "regulatory language"

Degree of compliance with township regulations:

High. Appears to meet standards.

Are plantings effective in achieving purposes stated in regulations?

Yes and no. Plantings help to separate vehicular traffic, but fulfillment of other

objectives is difficult to ascertain.

Are species used appropriate for site conditions?

Yes.

Is design of a durable nature?

Yes.

Are plants alive and thriving?

Yes.

Level at which plantings are maintained?

Moderate. Some pruning and removal of debris.

Is maintenance required in regulations?

No.

PLANT LISTS AND COMMENTS

HERBACEOUS AND GROUND COVER PLANTS:

SHRUBS:

Viburnum opulus

V. plicatum var. tomentosa

TREES:

Amelanchier arborea

Malus floribunda

Zelkova serrata

Longwood Program

COMMENTS:

Plantings seem to box in the site, rather than enhance it.

SPRINGFIELD TOWNSHIP REGULATIONS

1. Ordinance 645 Amendment adding landscape regulations to Subdivision/Land Development regulations.
2. Ordinance 646 Amendment adding landscape regulations to Zoning Ordinance.
3. Ordinance 706 Amendment covering conversion of school buildings for use as offices in a residential district as a conditional use.

ORDINANCE NO. 645

AN ORDINANCE TO AMEND THE CODE OF THE TOWNSHIP OF SPRINGFIELD (THE CODE) BY AMENDING THE PURPOSE OF THE "SPRINGFIELD TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE OF 1950, AS AMENDED", TO INCLUDE THE PURPOSES FOR MINIMUM LANDSCAPING REQUIREMENTS; AND TO ADD DEFINITIONS OF "GROUND COVER", "PLANTING AREA", "SHRUB", "SITE TRIANGLE", "TREE" AND "VISUAL SCREEN"; AND TO ADD MINIMUM LANDSCAPING REQUIREMENTS APPLICABLE TO CERTAIN LAND DEVELOPMENTS IN SPRINGFIELD TOWNSHIP.

THE BOARD OF COMMISSIONERS OF SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA, does hereby ENACT AND ORDAIN:

SECTION I. That Section 95-1 of the Code be amended by adding thereto the following subparagraph:

"E. To establish minimum landscaping requirements applicable to various land uses in Springfield Township which requirements are designed: to preserve and enhance the natural amenities of the Township; to avoid danger and congestion and to promote safety in vehicular traffic and parking areas; to provide buffer strips around parking areas and between non-complementary commercial, industrial and residential areas; to retard erosion, glare, and heat; to stimulate ground water recharge, air purification and oxygen regeneration; to aid in noise abatement; and to provide that the effect of future development in the Township shall not unreasonably interfere with the enjoyment of neighboring properties or with the natural environmental setting that is one of the Township's chief assets."

SECTION II. That Section 95-3 of the Code be amended by adding thereto the following definitions:

"GROUND COVER - Grass or non-deciduous low growing plants installed or planted in such a manner so as to form a continuous cover over the ground.

PLANTING AREA - Any area designed for landscaping having a minimum area of fifty (50) square feet.

SHRUB - A woody perennial plant having persistent woody stems, branching from the base.

SIGHT TRIANGLE - The area of a triangle whose legs are the sides of the cartway and an accessway which intersects with it, each being not less than ten (10) feet long from the point of intersection, and whose hypotenuse connects two legs.

TREE - Any woody plant having well defined stem of at least three and one-half (3½) inches in caliper measured at a height of six (6) inches above the natural grade.

VISUAL SCREEN - A barrier of landscape materials put in place for the purpose of obscuring from view those areas so screened."

SECTION III. That Section 95-11 of the Code, be amended by adding thereto the following subparagraphs:

"I. Landscaping. In all future land development the following land areas shall be landscaped in conformance with the following requirements:

1. Off Street Parking - Whenever a multi-family residence, office, commercial, institutional, land development or public facility provides an off-street parking area, there shall be a front perimeter strip, at least ten feet wide, separating the parking area from the street line on which the property fronts and there shall be a perimeter strip, at least four feet wide, between the parking area and any side and/or rear property lines. The perimeter strips shall be landscaped as follows:

(i) The Board of Commissioners shall require as a condition for approval of a subdivision application appropriately-landscaped visual screens as part of the perimeter strips to protect adjacent property owners and traffic on public thoroughfares from the glare of headlights and otherwise to ensure that such adjacent property owners have a quiet and private enjoyment of their premises;

(ii) On front perimeter strip there shall be at least one tree for each 40 feet of linear frontage. Such trees shall have the minimum height of at least 14 feet for deciduous and 7 feet for evergreen trees;

- (iii) The front, side, and rear perimeter strips shall be fully planted with ground cover and trees or shrubs. Existing trees and shrubs where appropriately located may be included in these areas;
- (iv) Whenever there is an accessway connecting the parking area to a public right-of-way a sight triangle shall be observed appropriate to insure traffic safety.

- 2. Off Street Parking in Areas Greater Than 10,000 Square Feet - In all parking areas (or combined adjacent parking areas) greater than 10,000 square feet perimeter strips as set forth in the preceding section (Section I (1)) of this Ordinance shall be required and, in addition, there shall be a planting area within the parking area no less than 2% of the total parking space to control the vehicular and pedestrian traffic and otherwise to beautify the parking area. The planting area shall be covered with ground cover, trees, or shrubs or other appropriate landscaping material as the Board of Commissioners in their discretion may approve with due regard for safety.
- 3. Whenever a multi-family residential, office, commercial, or public facility abuts land zoned as AA, A, B, or C residential, there shall be a buffer strip planted with ground cover, shrubs, or trees as the Board of Commissioners, in their discretion, may require as a visual screen to protect the privacy of adjacent landowners and to ensure quiet enjoyment of the property of such adjacent landowners. Such buffer strips shall be at least four feet wide and run the entire length of the abutted land.
- 4. No required landscape area shall be used for parking, accessory structures, garbage or trash collection; or any other functional use contrary to the intent and purpose of this Ordinance. All required landscaped areas shall be protected from vehicular encroachment by concrete wheel stops, concrete curbing, or other approved suitable methods.
- 5. The developer, when submitting the subdivision plan for approval by the Board of Commissioners shall as a part of his application indicate the landscaped areas, the proposed ground cover, the trees and shrubs with their approximate location."

SECTION IV. That Section 95-12 of the Code be amended to read as follows:

"I. 95-12. Guaranty for construction of improvements.

Before approving any subdivision plan for recording, the Board shall either require that the necessary landscaping, grading, paving and other street improvements, including, where specified by the Board, curbs, sidewalks, street lights, street signs, fire hydrants, water mains, gas mains, sanitary sewers and storm sewers, shall have been installed in strict accordance with the conditions prescribed by the Board, or that the Township is assured by means of a proper completion guaranty in the form of a bond, with surety satisfactory to the Township, or the deposit of funds or securities in escrow sufficient to cover the cost of the required improvements, as estimated by the Township Engineer, that the said improvements will subsequently be installed by the owner."

SECTION V. In all other respects, Chapter 95 of the Code, as heretofore amended, is hereby ratified and reaffirmed.

ENACTED AND ORDAINED this 8th Day of October A.D. 1975.

BOARD OF COMMISSIONERS OF
SPRINGFIELD TOWNSHIP

BY: /s/ J. William Siefert
J. William Siefert, President

ATTEST:

/s/ J. R. Fulginiti
J. R. Fulginiti, Secretary

ORDINANCE NO. 646

AN ORDINANCE TO AMEND THE CODE OF THE TOWNSHIP OF SPRINGFIELD (THE CODE) BY AMENDING CHAPTER 114 OF THE SPRINGFIELD TOWNSHIP ZONING CODE, TO INCLUDE A REQUIREMENT THAT OPEN SPACE BE SUITABLY LANDSCAPED IN CONFORMITY WITH THE REQUIREMENTS OF THE "SPRINGFIELD TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE OF 1950, AS AMENDED" (SECTION 95-1 OF THE CODE).

THE BOARD OF COMMISSIONERS OF SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA, does hereby ENACT AND ORDAIN:

SECTION I. That Chapter 114 of the Code shall be amended by adding Paragraph (3) to Section 114-71-D to read:

SECTION 114-71-D (3). The open space shall be suitably landscaped with grass, gardens, trees, or other landscape material to conform with the requirements of Section 95-11 of the Springfield Township Subdivision and Land Development Ordinance of 1950, as amended, to insure the preservation, insofar as is practicable, of existing trees, and to provide an attractive natural setting.

SECTION II. That Chapter 114 of the Code shall be amended by adding Section 114-95 to read:

SECTION 114-95. The open space shall be suitably landscaped with grass, gardens, trees, or other landscape material to conform with the requirements of Section 95-11 of the Springfield Township Subdivision and Land Development Ordinance of 1950, as amended, to insure the preservation, insofar as is practicable, of existing trees, and to provide an attractive natural setting.

SECTION III. That Chapter 114 of the Code shall be amended by adding Section 114-105 to read:

SECTION 114-105. The open space shall be suitably landscaped with grass, gardens, trees, or other landscape material to conform with the requirements of Section 95-11 of the Springfield Township Subdivision and Land Development Ordinance of 1950, as amended, to insure the preservation, insofar as is practicable, of existing trees, and to provide an attractive natural setting.

SECTION IV. In all other respects, Chapter 114 of the Code, as heretofore amended, is hereby ratified and reaffirmed.

ENACTED AND ORDAINED this 8th Day of October A.D. 1975.

BOARD OF COMMISSIONERS OF
SPRINGFIELD TOWNSHIP

BY: /s/ J. William Siefert
J. William Siefert, President

ATTEST:

/s/ J. R. Fulginiti
J. R. Fulginiti, Secretary

ORDINANCE NO. 706

AN ORDINANCE TO AMEND THE CODE OF THE
TOWNSHIP OF SPRINGFIELD (THE CODE)
CHAPTER 114, ZONING, TO PERMIT THE
CONVERSION OF SCHOOL BUILDINGS FOR USE
AS OFFICES IN ANY RESIDENTIAL DISTRICT,
AS A CONDITIONAL USE, SUBJECT TO CERTAIN
EXPRESSED STANDARDS AND CRITERIA; TO
DEFINE THE TERM "SCHOOL BUILDING".

THE BOARD OF COMMISSIONERS OF SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY,
PA., DOES HEREBY ENACT AND ORDAIN:

SECTION 1. That Article XIII, General Regulations be amended by
adding the following to permit the conversion of School Buildings to office use
under certain conditions:

Section 114-139 A. Conversion of School Buildings in Residential
Districts.

It is hereby declared to be the intent of this Section to permit, as
a conditional use, the conversion of existing school buildings in the Township
to office use when the Board of Commissioners determines, through the appli-
cation of the criteria and standards set forth below, that such use will not
have an adverse effect upon the character of surrounding residential develop-
ment or the health, safety and welfare of Springfield Township, in general.

1. Definition of School Building: For purposes of the application
of this Section, a "School Building" shall mean any existing building last law-
fully used for public, parochial, or private elementary or secondary educational
purposes; excluding, however, buildings used for nursery schools and day care
centers or other similar activity.

2. Conditional Office Use: The Board of Commissioners, after havin
received recommendations by the Planning Commission, may permit, as a condi-
tional use, the conversion of a school building and a designated lot for use as
business and professional offices in any residential district, upon a determi-
nation that such use will be consistent with the criteria hereinafter set forth.
Such use may be permitted subject to compliance with standards, requirements,
and conditions which are consistent with the following criteria and develop-
ment standards.

3. General Criteria:

(a) Restricted Use - when permitted as a conditional use pursuant to this Section, a school building may be converted for use as business and professional offices only, and for no other use. No manufacturing, storage warehousing, public display or sales of goods or merchandise (either at wholesale or retail) other than by mail or telephone, may be conducted within the school building or upon the lot on which the school building is located.

(b) Character of the Surrounding Area - the effect of the proposed conversion on surrounding properties shall be considered. The proposed conversion shall be such as will neither have an adverse effect on the neighborhood by reason of noise, glare, or other noxious elements injurious to the use and enjoyment of other properties in the immediate vicinity for the purposes already permitted in the Zoning District nor substantially diminish or impair property values within the neighborhood.

(c) Public Facilities and Services - the proposed use shall be such as will not create a substantial increase in demand for Township facilities and services including, but not limited to, sewage disposal, trash disposal, storm drainage, public transportation and fire and police protection.

(d) Traffic - the existing road system must be able to accommodate, in a safe and efficient manner, the peak traffic to be generated by the proposed use. The traffic to be so generated shall not be such as to create significant increases in volumes of traffic in surrounding residential areas. In order to evaluate this factor, the Board of Commissioners may require the applicant to provide a traffic impact statement in accordance with the following standards:

(i) A traffic impact study shall present sufficient information to enable the Township to assess the effect of the proposed use on the roads within the Township. The study must demonstrate that the proposed use will not adversely affect surrounding areas or traffic circulation generally in the Township, or else identify any traffic problems that might be caused or aggravated by the proposed use and delineate solutions to those problems. Based upon the findings of the study, the Board of Commissioners may require other improvements, both on-site and off-site, which would alleviate hazardous or congested situations attributable in substantial part to the proposed use, as a condition of approval.

(ii) The traffic impact study shall be prepared for a study area extending a minimum of one-half (1/2) mile on all abutting roads from the boundaries of the subject site. This area may be modified at the discretion of the Board of Commissioners.

(iii) The traffic impact study shall be prepared by a qualified traffic engineer who possesses the credentials outlined for a Municipal Traffic Engineer defined in Pennsylvania Code Chapter 612, entitled "Municipal Traffic Engineering Certification."

4. Development Standards

Each conversion and use which is permitted pursuant to this Section shall be designed, constructed and conducted in such a manner as to comply with the following standards and conditions:

(a) Buffer Area - there shall be a screen buffer at least 10 feet in depth along all property lines which shall be planted in accordance with a plan approved by the Township Planning Commission.

(b) Access - a planned system of efficient ingress, egress, and internal circulation of traffic which shall minimize any interference with nearby traffic flow shall be required. Loading and unloading areas shall be provided where deemed necessary, and shall be located to the rear of the proposed use and effectively screened from abutting residential districts. Such areas shall be so arranged that they may be used without blockage or interference with the use of accessways or automobile parking areas.

(c) Lighting - lighting shall be arranged in a manner which will protect adjacent highways and neighboring properties from unreasonable direct glare or hazardous interference of any kind.

(d) Solid Waste Disposal - a plan for weekly disposal of solid waste material shall be required. All solid waste material shall be stored in covered containers. No solid waste shall be stored within 15 feet of any property line. Refuse collection areas shall be shielded from the direct view of any adjacent property by walls which measure a minimum of six feet in height

(e) Parking - off-street parking facilities shall be provided and maintained in accordance with the following requirements:

(i) Parking spaces shall be provided according to the requirements set forth in Section 114-134 of the Code.

(ii) Parking areas shall be buffered from all buildings by a minimum of 10 feet of landscaped open space.

(f) Signs - one non-illuminated sign containing not in excess of 32 square feet of area in the aggregate, no part of which shall be more than 8 feet in height, shall be permitted.

(g) Maintenance of Open Space - open space shall be preserved as such whenever possible, and appropriate measures to ensure proper maintenance shall be taken.

(h) Hours of Operation - hours of office operation shall be restricted so as to not interfere with surrounding residential areas.

(i) District Requirements - all dimensional and other requirement for the Zoning District in which the School Building is located shall apply except as specifically provided to the contrary in this Section.

(j) Exterior Dimensions - no change in the exterior dimensions of a School Building shall be permitted except for minor changes related to the construction of such bays, porches, vestibules and similar architectural features which shall not, in the aggregate, change any dimension by more than 5%.

5. Additional Conditions; Waiver: The Board of Commissioners may, at its discretion, attach additional conditions to the approval of a conditional use application for the conversion of a school building to office use, provided such conditions are reasonably related to the criteria and development standards established herein. If the applicant can demonstrate to the reasonable satisfaction of the Board of Commissioners that the strict application of any of the above development standards is unnecessary to meet the intent and general criteria of this Section, the Board of Commissioners may waive or modify the applicability of such standards to the particular conversion project. Any request for such modification or waiver, together with a summary of the basis for such request, shall be submitted to the Board of Commissioners in writing.

6. Procedure for Consideration of a Conditional Use Application: An application for the conversion of a School Building to office use as a conditional use pursuant to this Section shall be applied for and considered by the Board of Commissioners according to the following procedures:

(a) Application - an application shall be submitted in writing to the Township and shall include the following:

(i) A plot plan of the lot showing the location of all present and proposed buildings, drives, parking lots, and other construction features on the lot; and all buildings, streets, alleys, easements, rights-of-way, highways, streams and other topographical features of the lot and within 200 feet of any lot line.

(ii) Architectural renderings or sketches of the School Building showing any proposed modifications.

(iii) A description of the proposed office operation in sufficient detail to permit the evaluation of the compliance or non-compliance

of these operations with the criteria and standards of this Section.

(iv) Engineering and architectural plans for the handling of any excess traffic congestion, noise, glare or safety hazard.

(v) Engineering and architectural plans for the treatment and disposal of sewage.

(vi) Any other pertinent data that the Planning Commission or the Board of Commissioners may require.

(b) Distribution of Plans - the Board of Commissioners shall submit copies of the plan to the Township Planning Commission, the Township Engineer, the Zoning Officer, the Montgomery County Planning Commission and other public agencies for advice and comment as part of the Board's review.

(c) Hearing - the Board of Commissioners shall hold a public hearing on each application, pursuant to public notice, within 60 days after the meeting at which the proposal is first presented.

(d) Communication of Determination - the Board of Commissioners shall, by written communication mailed to the applicant within a reasonable time following the conclusion of the public hearing provided for in this Section, either grant approval of the conditional use application as submitted, grant approval of such use subject to specified additional conditions not inconsistent with the criteria and standards set forth in this Section as the Township Commissioners shall specify, or deny approval of the application.

7. Ratification of Zoning Code: This Ordinance shall be construed to amend the Zoning Code to permit the conversion of School Buildings under the limited circumstances set forth above only. In all other respects, in Chapter 114, Zoning, is hereby ratified and reaffirmed.

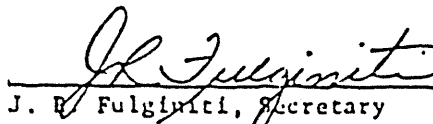
ENACTED AND ORDAINED this 14th day of OCTOBER A.D. 1981.

BOARD OF COMMISSIONERS OF
SPRINGFIELD TOWNSHIP

By: 

J. William Siefert, President

ATTEST:


J. R. Fulginiti, Secretary

APPENDIX E

RESOURCE LIST:

**ORGANIZATIONS INVOLVED IN LAND-USE PLANNING
TECHNICAL ASSISTANCE AND RELATED SUBJECTS**

*Longwood Program***American Land Resource Association**

5410 Grosvenor Lane

Bethesda, MD 20814

(301) 493-9140

President: Kevin Coyle

Objectives: To raise and help resolve national issues pertaining to land use and conservation through an organized program of research, discussion, and publication.

American Planning Association

1776 Massachusetts Ave. NW

Wash., DC 20036

(202) 872-0611

Executive Director: Israel Stollman

Objectives: To foster the best techniques and decisions for the planned development of communities and regions. APA provides extensive professional services to professionals and laymen in planning and related fields, and serves as a clearinghouse for information.

Environmental Management Center

Brandywine Conservancy

P.O. Box 141

Chadds Ford, PA 19317

(215) 388-7601

Director: William Sellers

The Brandywine Conservancy Environmental Management Center provides technical assistance on matters of land-use, water quality, and natural and historic resource protection to individuals, organizations, and governmental agencies across Pennsylvania and other states.

Center for Design Planning

3695 St. Gaudens Rd.

Coconut Grove, FL 33133

(305) 448-0422

Executive Director: Harold Lewis Malt

The Center for Design Planning investigates the public outdoor environment and seeks to improve it for users. Its staff conducts research on neighborhood conservation, commercial revitalization, and cultural facilities.

National Arbor Day Foundation

100 Arbor Ave.

Nebraska City, NE 68410

(402) 474-5655

Executive Director: John Rosenow

The National Arbor Day Foundation works toward the goal of improving tree planting and care throughout the country, especially in the nation's cities. It helps cities to establish comprehensive tree care programs and publishes a model street tree ordinance.

Partners for Livable Places

1429 21st St. NW

Wash., DC 20036

(202) 887-5990

Executive Director: Robert McNulty

Partners' programs deal with the conservation and development of the physical environment, aiming to improve quality of community life and to foster greater public consciousness of physical surroundings and their potential. Technical Assistance Teams, composed of staff members, are formed to work on projects throughout the United States.

Townscape Institute

2 Hubbard Park

Cambridge, MA 02122

(617) 491-8952

Executive Director: Ronald Fleming

Townscape is a small nonprofit organization that is concerned with community identity, particularly through "Main Street"-type projects.

University of Wisconsin Environmental Awareness Center

B-105 Steenbock Library

Madison, WI 53706

(608) 263-2808

Executive Director: Phillip Lewis, Jr.

Objectives: To develop a rural and urban design process that allows interdisciplinary teams working with local and regional citizen groups and agencies to identify, protect and enhance natural and cultural amenities of cities, towns, and rural landscapes.

GLOSSARY OF TERMS

APPENDIX F

Longwood Program

Definitions after Meshenberg, *The Language of Zoning*, Chicago: American Society of Planning Officials, 1976.

aesthetic zoning The regulation of building or site design to achieve desirable appearance.

amenity Aesthetic or other characteristics of a development that increase its desirability to a community or its marketability to the public.

buffer zone A strip of land, identified in the zoning or subdivision ordinance, established to protect one type of land use from another with which it may be incompatible.

buildable area The space remaining on a lot after the minimum dimension (setbacks, yards,) requirements have been met.

building coverage The amount of land covered or permitted to be covered by a building, usually measured in terms of percentage of a lot.

cumulative (pyramidal) zoning A zoning scheme that begins with the most protected land use, usually the single-family home, and permits in each "lower" district all the uses above plus new ones, in a pyramidal fashion. Many modern zoning ordinances have dropped the cumulative feature in favor of **exclusive use zoning**.

density The maximum number of families, persons, or housing units per unit of land.

discretion The exercise of judgement on part of local officials in deciding whether to approve or disapprove a developer's application for a permit. It can be exercised through the use of such flexibility features as conditional use or site plan review. It can also be abused, as a tool to extort from developers concessions which could not be required legally.

exclusionary zoning Zoning which, because of its requirements, has the effect of keeping out racial minorities, low-income families, or, in some cases, additional population of any kind.

Longwood Program

exclusive use The establishment of zoning districts which allow only a limited range of uses in each district, according to a land-use plan or stated objectives.

flexible regulations Flexibility options reflect an understanding that the appropriate use of every parcel of land cannot be predetermined; as a result, policies and criteria for decision making are established, often through performance standards.

infrastructure Permanent fixtures and framework, such as streets and utilities.

intensity The degree to which land is used. While frequently used synonymously with density, intensity has a somewhat broader, though less clear meaning.

mixed use zoning Zoning which permits a combination of usually separated uses within a single development.

performance standards A minimum requirement or maximum allowable limit on the effects or characteristics of a use, usually written in the form of regulatory language.

site plan A plan, to scale, showing uses and structures proposed for a parcel of land as required by the regulations. It may include lot lines, streets, building sites, reserved open space, buildings, major landscape features, and location of proposed utility lines.

sketch plan A generalized map, prepared by the developer, to serve as a basis for preliminary discussion of a proposed development with the planning commission.

strip zoning A zone normally consisting of a ribbon of uses fronting both sides of an arterial roadway and extending inward for about half a block. Strip commercial development is the most common form; it is usually characterized by an assortment of gas stations, fast food restaurants, stores, etc.

variance A device which grants a property owner relief from certain provisions of a zoning ordinance when, because of the particular physical surroundings, shape, or topographical condition of the property, compliance would result in a particular hardship on the owner.