Pietro Belluschi, Dean  
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Dear Dean Belluschi:

In partial fulfilment of the requirements for the degree, Master in Architecture, I herewith respectfully submit this thesis entitled, A CEMETERY PROPOSAL FOR COOPERATING MUNICIPALITIES.

Respectfully,

J. Walter Roth
ABSTRACT

A CEMETERY PROPOSAL FOR COOPERATING MUNICIPALITIES
submitted by J. Walter Roth in partial fulfilment
of the requirements for the degree
Master in Architecture.

School of Architecture and Planning
Massachusetts Institute of Technology
August, 1952

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already has an adequately large municipal cemetery. In
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Cemetery and Sharon Memorial Park (perhaps the largest
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In this case the "realities" are not real! The
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That this cemetery might also serve as municipal
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FOR COOPERATING MUNICIPALITIES

Submitted in partial fulfilment
of requirements for the degree
Master in Architecture
August, 1952

J. Walter Roth
B. A., Central High School of Philadelphia, 1941
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Prof. L. B. Anderson
Mr. T. Gorm Hanson
Prof. R. B. Greeley

And, for the important patience, understanding, and invaluable aid of my good wife, Kay.

Also Professor Collins, Chairman of Landscape Architecture at Harvard University.
DEDICATION

This work is dedicated
as a
Kaddish
to the memory of
My Mother

"Baruch atah Adonai choneyn hadaat"
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Abstract
ABSTRACT

A CEMETERY PROPOSAL FOR COOPERATING MUNICIPALITIES submitted by J. Walter Roth in partial fulfilment of the requirements for the degree Master in Architecture.

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The non-sectarian, municipal cemetery, though not new to New England, represents to me one area of interest to the social-minded architect (and what architect cannot but be social-minded?).

Offhand, it would seem that my choice of site seems to fly in the face of "reality;"- Canton, Massachusetts, already has an adequately large municipal cemetery. In addition, there are near Canton a large Catholic cemetery and a corporation venture: Knollwood Non-Sectarian Cemetery and Sharon Memorial Park (perhaps the largest Jewish cemetery in New England). Now then, my new hypothetical cemetery should tend to make the obscure town of Canton the cemetery center of the Northeast, one might conclude.

In this case the "realities" are not real! The hypothesis transcends the cemetery acreage-population ratio and stands important. If this thesis indicates anything it means to show that the cooperation of municipalities should not be limited to those concerns connected with immediate activity. Municipal cemeteries are at present a drain upon the town funds and the big item is maintenance. Therefore, this thesis proposes that one town, growing slowly, make available land for a cemetery to two other nearby towns that will share in its use and help carry the burden of proper maintenance.

That this cemetery might also serve as municipal green space and a pleasant area of re-creation is also the purpose of this thesis.
Introduction
INTRODUCTION

This project, undertaken and completed in a mere six weeks, may not add any perceptible height to that mighty and unshakeable edifice I shall call architectural knowledge, but it may serve as a minimum footing, providing a base for the author or one of his fraternity to proceed to a cognizant elevation in later studies.

I found in my research that there was very little architecturally coordinated material that the interested inquirer could draw upon. It seems that cemeteries, like so many other things, are popularly never given any thought until one has need of them, - and especially then, at a time when those involved are least likely to give careful thought. Professionally, it appears that the design of cemeteries has become the "specialty" of a number of "specializing" architects, landscape architects, and "designers" who very cozily go on from year to year stuffing their multitudes of little 3' x 9' plots into tracts given them by some entrepreneur; relieving their "design" frustration by spotting "features" here and there. As might be expected, these "features" are entirely of the caliber and very much in keeping with the sickening satins lining the overdone, security-smacking strong box which encases an hysterically overdressed and cosmeticed cadaver, and which, in turn, is topped off with an ostentatious Gibraltar of a monument, again symbolising
the "security" that the miserable inhabiting shade had been seeking all through his existence in this world.

In this written portion of my thesis I have endeavored to draw a picture of cemetery design that would not be restricted to the conclusions that I have come to as a result of my study. It became more and more obvious to me that no single sources of adequate architectural caliber exist:. And so, I have included a rather voluminous, if not extensive, section on some of the customs, practices and standards current and past. It is hoped that these curios will prove informative, if not especially entertaining, in supplying a part of that panorama which is the existing actuality of cemetery design.

Therefore, succeeding thesis-authors, draw upon these figures, these standards, these indices, and, unhindered by the need for niggling research, carry on to rise above the mire of data to the happy heights of unhindered design.
Historical Aspects
THE HISTORICAL BASIS

In earlier times cemeteries were physical expressions of social group action. They were municipal cemeteries, they were church cemeteries or they were cemeteries of one sort or another having as their basis of being a definite matter of course-ness stemming from roots in homogeneous communities.

The New England region, though not especially homogeneous in the make-up of all its communities, still retains in many cases the municipal cemetery as a more or less active institution. In my own native Philadelphia the municipal cemetery serves merely as a "potter's field", and the instances of municipal cemeteries among the small, outlying suburbs are rare, as opposed to the New England practice. Those cemeteries serving the Quaker city are found to be owned by religious bodies, private corporations, fraternal organizations, and burial societies. We find that white Protestants are mostly buried in corporation cemeteries; Roman Catholics are buried in cemeteries owned by their parishes; Jewish cemeteries are owned by corporations or fraternal organizations; and most Negroes are buried by burial societies. A number of cemeteries of the private corporation type are non-sectarian.

One of the oldest, largest, and best known of these corporation cemeteries in the Philadelphia area is
Laurel Hill Cemetery. It is interesting to read a piece on Laurel Hill by the early American landscape architect, Downing. This is from a selection called "Cemeteries and Public Gardens", dated July, 1849. It is interesting to note in his writing the case made for the cemetery as a "working" green-strip, but more of that later.

"The great attraction of these (rural) cemeteries, to the mass of the community, is not in the fact that they are burial places or solemn places of meditation for the friends of the deceased, or striking exhibitions of monumental sculpture, (Milano!) though all these have their influence. All these might be realized in a burial ground planted with straight lines of willows and sombre avenues of evergreens. The true secret of the attraction lies in the natural beauty of the sites and in the tasteful and harmonious embellishment of these sites by art. Nearly all these cemeteries were rich portions of forest land, broken by hill and dale and varied by copses and glades, like Mt. Auburn and Greenwood, or old country-seats richly wooded with fine planted trees, like Laurel Hill. Hence, to an inhabitant of

the town, a visit to one of these spots has the united charm of nature and art, - the double wealth of rural and moral associations. It awakens at the same moment the feeling of human sympathy and the love of natural beauty implanted in every heart. His must be a dull or a trifling soul that neither swells with emotion nor rises with admiration at the varied beauty of these lovely and hallowed spots.

"Indeed, in the absence of great public gardens, such as we must surely have some day in America, our rural cemeteries are doing a great deal to enlarge and educate the popular taste in rural embellishment. They are for the most part laid out with admirable taste; they contain the greatest variety of trees and shrubs to be found in the country, and several of them are kept in a manner seldom equalled in private places."

And, in another place Downing writes:

"Philadelphia has, we learn, nearly 20 rural cemeteries at the present moment, several of them belonging to distinct societies, sects or associations, while others are open to all."¹

¹ Opus cited
"To enable them to judge how largely they (public cemeteries) arouse public curiosity, (italics my own) we may mention that at Laurel Hill, four miles from Philadelphia, an account was kept of the number of visitors during last season; and the sum total, as we were told by one of the directors, was nearly 30,000 persons who entered the gates between April and December, 1848."¹

Turning closer to the local Boston scene, Downing mentions the first, and certainly one of the foremost, landscaped cemeteries:

"Twenty years ago nothing better than a common graveyard, filled with high grass and a chance sprinkling of weeds and thistles was to be found in the Union. If there were one or two exceptions, like the burial ground at New Haven, where a few willow trees broke the monotony of the scene, they existed only to prove the rule more completely."²

"Travellers made pilgrimages to the Athens of New England, solely to see the realization of their long cherished dream of a resting place for the dead, at once sacred from profanation, dear to the memory, and captivating to the imagination."³

¹ Opus cited, P. 374
² Opus cited, P. 371
³ Opus cited, P. 371
If the road to Mt. Auburn is now lined with coaches, continually carrying the inhabitants of Boston by thousands and tens of thousands...."1

This last item causes one to pause and think of the differences inherent in the coach of 1849 and the automobile of 1952. A coach drive through "Sweet Auburn" would just about satisfy a Sunday afternoon 'way back then, but how inadequate (in a horizontal expansion sense) it would be for the Sunday auto ride of today. And what little it would promise by way of the sensational rewards we demand of our leisure! Still, this only tends to point up the fact that although automobile resort to Mt. Auburn Cemetery is now for most purposes impossible, one can best repair there by foot, and in that manner we might recapture a little of the much needed Sunday pedestrianism we seem to have entirely lost!

Downing finally makes his point thusly:

"Now, if hundreds of thousands of the inhabitants of cities like New York.........incur the expense and trouble of going five or six miles to visit Greenwood........."2

1 Opus cited, P. 376
2 Opus cited, P. 377
Downing used the landscaped cemetery as an object lesson in his campaign for public gardens which, in his time, were lacking in the United States. Luckily, Olmsted came along. Here is how Lewis Mumford\textsuperscript{1} appraises the situation:

"But in the 19th century, the nature of the park was altered: its mission was, as Olmsted said of Central Park, to provide for the masses of the city a brief equivalent of a visit to the countryside. The designers recognized the need of the saving opposite within the city. This was the more positive side of romantic disorder.

"In what form do these new pastoral spaces first appear? To achieve peace and quiet, to insulate oneself from the noisy lanes of traffic, one must - do not laugh! - visit the dead. Mt. Auburn Cemetery in Boston was one of the first of the new landscaped areas, spread out in ample acres, which was designed to resuscitate the living as well as solemnly to enfold the deceased. (italics my own) In this crazy utilitarian world, it was the dear departed who enjoyed most fully a good environment; while the dark caves of houses were more like catacombs than homes for the living. Life came back to the town by way of the graveyard; just as in more

than one city the removal of tombstones served to
turn the churchyard into a necessary breathing space
for congested quarters. This is not the first time
in recorded history, from the days of the Egyptian
tomb-builders onward, when the dead were abundantly
supplied with the necessaries of life that were
denied to the quick."

Observe then, - the cemetery as Open Space. The idea
of cemeteries serving as green strips and spots is neither
new nor unusual among city planners. Their use can be
very effective. It has been my experience to learn that a
great number of householders object to being located in
positions adjoining cemeteries. This is especially true
in heavily built-up city districts and can no doubt be
laid to the extreme ugliness produced by those terrible
stone orchards of commemoration. It is little wonder that
real estate values fall off and slums develop.

Today the landscaped cemetery in the United States
is more than merely accepted; it is generally the rule.
From the romantic garden ventures of the nineteenth
century to the lush extravaganzas so fitting to Hollywood,
they dot the American scene.

Cremation or some other technique may change the
picture in time; in the meanwhile, the mores spores from
its very pores.
The Historical Background of Cremation: 1

Cremation was a common practice among prehistoric Aryan races who peopled by successive migrations most of Europe and India. The custom transmitted to their descendants, - the Celts, Teutons, Hindus, Persians, Greeks, and Romans, in whose literature we find many references to the "sacred flame" and their belief in its purifying power. In Athens and Rome, burning on the pyre was the general rule well into the Christian era. Because, however, of the growing extravagance of the funeral rites and the scarcity of fuel, the practice became less popular - a trend accentuated by the rise of the doctrine of the resurrection of the physical body and by the plight of the early Christians who had to resort to the secrecy of earth burial in order to avoid persecution and interference with their religious rites. Thus did an ancient practice which was common in nearly all civilized countries except Egypt, Judēa, and China gradually fall into eclipse.

It was not until the middle of the 19th century that the revival of cremation began prominently to be advocated in Europe by distinguished physicians and chemists. Impetus was given particularly by the Italians Brunetti, Polli, and Gorini, who conducted scientific experiments

1 Mt. Auburn Cemetery, Columbaria at Mt. Auburn Cemetery, Cambridge, Mass., Mt. Auburn Cemetery, 1939
and developed an improved type of incineration chamber in the decade commencing 1869. Societies for promoting cremation were organized as early as 1874, and by 1880 two incinerators were in operation in Milan. In the United States, Dr. F. Julius LeMoyne erected in 1876 a private crematory at Washington, Pa., but it was not until late in 1884 that a crematory was opened to the public at Lancaster, Pa., to be followed by two in New York State the next year. Mt. Auburn was the first New England cemetery to build a crematory, inaugurating service in April, 1900, or less than seven years after the Massachusetts Cremation Society began operations in Boston in December, 1893. In 1939, the more than 200 crematories in the United States testified to the general acceptance and growing practice of cremation.
Standards
Herewith set forth are a number of standards recommended by the American Monument Association, Inc., an organization not especially unbiased in its attitude toward the cemetery. For this they have already been chastised by the awful tongue of Frank Lloyd Wright.

Although any discerning reader will be quick to notice the corny "taste" inherent in the proposals of the American Monument Association, I have chosen to include all but the most violently repulsive in order to give a fair picture of the current standards of practice in the architecturally-neglected field of American cemetery design.

It may be observed that some sense of good and reasonable practice is retained when the standards are implied as broad and general direction. Once they narrow down to detail they defeat the good intent by stultifying restriction. Any number of similes could be made.

Here then are the recommendations of the American Monument Association¹ (here and there my own comments are interspersed):

Long-range, complete, master plan essential. Can be carried out area by area or section by section.

The Entrance - Traffic a major problem (to become even

more acute). Locate entrance far enough back from highway to allow wide, curved approach. At least two-lane width, affording visibility in both directions. For purposes of control, generally advisable to avoid more than one entrance.

Administration Building - Readily accessible to entrance area .... Accessibility in meeting and escorting funeral processions into the grounds. Locate well enough within entrance to allow complete funeral cortège to get off highway. Provide for privacy in connection with interviews and arranging interment or funeral details. Provide ample area for parking (and future parking).

Roadways - Heavy traffic of passenger cars and trucks. Width to afford free movement beside parked vehicles. Long, graceful turns at intersections (avoids damage to edges of lawn area).

Avoid long stretches of absolutely straight drives. Provide ample setbacks from roads to lot lines for water, drainage structures and trees (extra important in areas subject to heavy snows, - in order to take road snow).

Section depth - conservative maximum distance takes into account carrying casket, removing surplus earth, clearing paths through snow for winter interment. Drainage vitally important. Consult authorities.
Double-loaded roads (supposedly) more economical.

**Service Buildings** - Availability to main highway.
Convenience to present and future areas to be serviced. Proper screening from interment sections.
Sufficient space for expansion of facilities.
(Inspect many previous cemetery buildings).

**Chapels and Chapel Sites** - Locate as centrally as possible to entire cemetery with due consideration to future extensions and additions.
Ample parking space a necessity.
Study chapel design and service requirements carefully.
Possibility of combination chapel and administration buildings.

**Plantings** - Governed by geographical area.
Select trees and plants native to vicinity, thereby requiring minimal care.

**Water Supply** - Provide water lines in casements provided by set backs from roads.
Furnish sufficient outlets for complete coverage.
Show all water lines on master plan.

**Records** - Adequate fireproof storage facilities.
Expansion space.
Spaces large enough to wheel in ledger and index card systems maintained in office during working hours.
Duplicate records, storing each set in different place.
Microfilm records and store in safe deposit boxes.
Future Growth - "A cemetery is as much a community institution as its public service facilities."

"A cemetery should be so situated that it cannot block off community growth in any direction or be constricted by unforeseen community developments... consult with local public officials and community Planning Boards.

"Impress upon public officials and the people of the community the importance of the traditional monument cemetery."

War Memorial Areas - "A war memorial or, preferably, a veterans' area, the feature of which is a memorial."

"A natural desire for veterans to be interred with their families,...plan areas to accommodate not veterans alone, but veterans and their families. This is extremely important."

By "veteran" I would assume is meant "war-dead", for no one who has done his expected service to the country should expect to be commemorated by such an obvious, theatrical and immodest technique. Therefore how could war-dead and their families be easily accommodated? As a basic philosophical point I believe that these dead should be buried separate and aside though not in regimented assembly. They should be isolated, for, poor souls, they have been taken out of the normal stream of life.

"Provide space in or adjacent to veterans' areas for cenotaphs or memorials for those interred elsewhere,
lost at sea, missing in action. (List names on memorials).

"Provisions for utilizing this area for patriotic ceremonies on days of special significance."

Historical significance.

Lawns - Where grade changes are required, strip and stock pile top soil. Grade to desired sub-grade and then replace top soil.

Proper fertilization.

Extensions - Plan extensions far enough in advance so that lawns can be established and smaller tree and shrub stock utilized. (Two to three years in advance of need).

Developing too far in advance increases maintenance costs. (However, advanced development should increase sales "in advance of need.")

Color (flower beds) - "......an inspiration to the living......."

"......cheerful and beautiful......."

"......colorful flower beds to be visible throughout the cemetery and adjacent to all sections...."

"......confine the view to shorter vistas, thereby preventing monotony in design and effect."

Lot Sizes - Smaller families today.

"Better service can be rendered if the public is sold 'family lots' instead of a certain number of 'grave spaces' or 'square feet'."
This makes for more careful selection on the part of the purchaser.

Memorialization:

Family Monument - To avoid the appearance of congestion, only one central or family memorial should be placed on a family plot. When the memorial is set at the rear of the plot it should be set at least 3" from the rear line. It is recommended that each cemetery have a plan on which the location of the monument on the plot will be designated.

Mausoleums - Mausoleums or tombs either wholly or partially above ground should be constructed only in lots designated by the cemetery.

Agreements by quarrier, manufacturers, finishers, and builders usually carry 5 year guarantee.

Foundations - Where foundations for monuments, markers, mausoleums, tombs, etc. are installed by the cemetery, the charges should be reasonable, uniform and published.

If any fault resulting from improper installation of foundations by the cemetery develops within 5 years from date of installation, the cemetery shall rectify the condition without cost to others. Foundation is to be full size of base of memorial and finished 2" below grade at top.

Size of Monument - Size of a family memorial should be governed according to the ratio of its face area (length x height) to the superficial area of the lot.
and the ratio of its length (greatest horizontal dimension) to the average width of the lot. The face area of each piece is to be figured separately.

It seems advisable that the face of the memorial should not exceed 60% of the average width of the lot. The following table gives examples:

<table>
<thead>
<tr>
<th>Dim. of Lot L - W</th>
<th>Superficial Area of Lot</th>
<th>Max. L of Base from End to End</th>
<th>Max. Superficial Area in Face of Monument</th>
</tr>
</thead>
<tbody>
<tr>
<td>11' x 10'</td>
<td>110 sq. ft.</td>
<td>6'</td>
<td>16.5 sq. ft.</td>
</tr>
<tr>
<td>12' x 10'</td>
<td>132 sq. ft.</td>
<td>7' - 2&quot;</td>
<td>19.8 sq. ft.</td>
</tr>
<tr>
<td>20' x 10'</td>
<td>200 sq. ft.</td>
<td>6'</td>
<td>30.0 sq. ft.</td>
</tr>
<tr>
<td>22' x 13'</td>
<td>286 sq. ft.</td>
<td>7' - 3&quot;</td>
<td>42.9 sq. ft.</td>
</tr>
<tr>
<td>22' x 14'</td>
<td>308 sq. ft.</td>
<td>8' - 4&quot;</td>
<td>46.2 sq. ft.</td>
</tr>
</tbody>
</table>

The above suggestions are for maximum size only.

For many reasons it is often desirable to build a Memorial less than maximum. (Italics my own)

Generally, no lot should be less than 11' deep.

On small lots and on slopes, one piece memorials are recommended.

Base - For harmonious appearance, where a base and name-stone are used, the base should be of the same material as the name-stone.

Individual Markers - ........ Individual markers, whenever possible in lots, should be placed at end of grave farthest from the base of monument. In single grave sections all markers should be placed at the head of the grave.

Two-Piece Markers - In sections where other types
including two-piece memorial markers are permitted, base may not exceed 2'6" over all.

**Tablets at Individual Graves** - Where tablets, such as the Colonial headstone type are used at each grave instead of a family monument, they shouldn't exceed 2' in width, 6" in thickness and 3'-8" in height. Thickness should not be less than 1".

**Corner Posts** - Lot corner marker posts, whenever used, should be of monumental stone placed level with grade. Initials should be incised, not raised. Posts should be finished where they abut on adjacent lots. All corner posts will be set by the cemetery and a reasonable charge made for this work.

**Sketch Required** - To avoid errors it is required that a sketch drawn to scale showing design and complete inscription in detail, with all dimensions, be submitted in duplicate and that approval in writing be secured from the cemetery before the foundation for the memorial is installed. It is important that the approval of the material, style and size of the memorial be secured before commencing work upon the memorial.

**Approval of Design by Cemetery** - Necessary that the cemetery officials retain authority to reject any plan or design for a memorial which, on account of size design or inscription, is unsuitable.....
Upon application, any rejection shall be promptly reviewed by the Governing Board of the cemetery.

Duplication - Duplication of the design of any monument or mausoleum is an injustice to the owner of the original and therefore should not be permitted in a locality in noticeable proximity to the original without permission of the owner of the original.

Right to Remove - Should any monument, mausoleum or tomb become unsightly, dilapidated, or a menace to visitors, the cemetery shall have the right at the expense of the lot owner either to correct the condition or to remove the same.

Painting and Coloring, etc. - The gold leafing, painting, coloring, enameling, lacquering, gilding or bronzing of letters or other parts of memorial is not recommended.

Photographs on Memorials - The reproduction of a photograph on glass, porcelain or other material attached to memorial is not recommended.

Symbols, Epitaphs Desirable - Symbols, as of faith, hope and love, as well as religious symbols such as the Cross, or Star of David, and Emblems of Fraternal and Military organizations contribute to the significance of the memorial. Epitaphs decidedly add personality to the memorial. It is therefore recommended that symbols, epitaphs and historical inscriptions be used whenever possible.
Practices
The following show that a municipal cemetery can serve the passive functions of a municipal park. Recreation need not be only of the running, jumping, picnicking type. There is also in us a need for re-creation, to be served by the pleasant, fertile pursuits of observation and reflection.

Mt. Auburn at its inception a combination of rural cemetery and arboretum. Land given by Boston Horticultural Society which later pulled out - "the operation of the experimental garden in connection with the cemetery proved to be impractical, so arrangements were made within the Society for segregating the cemetery and placing it under separate management." Mt. Auburn now pays annually to the Horticultural Society approximately $\frac{1}{8}$ of the sums received from the sales of lots in the older section of the cemetery.1

"Several areas within the Cemetery have been set-off under the By-Laws as reserved spaces which must forever be kept open and used only as ornamental grounds."

1 Mt. Auburn Cemetery, Mt. Auburn Cemetery, Cambridge, Mass., Mt. Auburn Cemetery, 1939
Mt. Auburn as a bird sanctuary - winter feeding, nesting houses, baths, etc.¹

In addition to its naturalistic wealth our cemeteries can, in a less conscious degree, support the museum role of our art galleries and our historical sites.

Memorials to famous persons (some in absentia).²

".....those who come to do honor to public benefactors and religious leaders or to study fine examples of the work of such leading American sculptors and architects....."³
"Mt. Auburn is a non-sectarian cemetery where burial lots and rights of interment in single graves are sold without discrimination with respect to race, color or creed. It is a non-stock corporation and is not conducted for profit. All income is expended upon the maintenance or improvement of the Cemetery. There are no salesmen or solicitors and no proprietor or other individual receives any share of the proceeds of the sale of lots. Prices are fixed as low as is consistent with reasonable assurance of complete protection in perpetuity.

"Mt. Auburn is under the management of twelve Trustees who are elected by the Proprietors and who, with the exception of the President, serve without pay. For more than 100 years the office of Trustee has been regarded as an opportunity to perform a civic service. Because of this fine tradition, the Cemetery has been fortunate in attracting as such Trustees men who have gladly given long years of service........"1

1 Opus cited
The administration of Mt. Auburn Cemetery, both executive and financial, is indicated by the following. It will be noted that it sets a good pattern for municipal administration.

"In addition to the sum deposited in the Trust Fund for the perpetual care of the lot, the net proceeds realized on each sale is deposited in the Permanent Fund, the purpose of which is to provide adequate income for the care and preservation of the cemetery property when all the lots shall have been sold. The principal of these two funds may not be used for any purpose of the Corporation, and the custodial and advisory services of a leading Boston bank are employed to assume the security and competent administration of the entire investment fund. This fixed financial policy is of vital importance to the lot owner, for there is no better way of assuring complete protection and care of his property in perpetuity. All income from whatever source is expended either in the rendering of a specific service or on the maintenance or improvement of the cemetery. There are no salesmen to whom commissions must be paid and, as the Corporation is of the non-stock or mutual type, there are no proprietors or other individuals who share in any income.

"In order to encourage the selection of lots
before actual need, it now offers a plan whereby such lots may be acquired on a convenient budget basis. (Italics my own). The outright purchase of lots is still recommended, and will be required in the case of single graves." 1 (Italics my own).

Highest number of lots sold are single graves; therefore, this may be a device to sell more large lots.

"Trustees
- No trustees get salary except President
- Stated meetings monthly.
  Special meetings called by President.
  Quorum is six (of twelve)
- Officers (President, Secretary, Treasurer) chosen by Trustees.
- Annual Report.
- Have general management, superintendence, care of property, expenditures, business, sales of lots, etc.
- Standing Committees:
  Finance (3 trustees)
  Grounds (5 trustees)
  Lots (3 trustees)
  Interments (3 trustees)

Permanent Fund
- Invested in conservative securities
- Principal not to be used.


Some or all of proceeds from sale of lots to be added to principal each year.
- Income used for operations, improvements, etc.

Trust Fund
- Invested like Permanent Fund.
- Used for care of specific lots that have paid this money.

Condemnation
- Trustees may condemn lots, structures, etc.

Reserved Spaces
- Spaces near entrance, chapels and cemetery buildings, special land features, special monuments, etc., to be kept free of lots, graves, memorials, structures.¹

Services and Facilities at Mt. Auburn Cemetery:

Perpetual Care - Since 1876 the purchase price of a lot has included the sum required to provide for perpetual care of the grass. Any memorials, plantings or other structures subsequently placed on the lot are not, however, under perpetual care unless covered by additional contracts.

Chapel Services - Bigelow Chapel has cap. of 125
Story Chapel has capacity of 300
Both have a family room as well as an organ.

Crematory - has four cremation chambers (no extra charge for use of Bigelow Chapel in connection with a cremation).

Columbaria in Story Chapel and Bigelow Chapel offering selection of marble Niches with glass or bronze fronts.
Capacity ranges from one to six urns.
Also available an Urn Vault for either temporary or permanent deposit of urns.

Memorial Urns - Copper Containers, Marble Urns, Gorham Bronze Urns. Cemetery equipped to engrave urns at reasonable charges.

Interments - Concrete Vaults and Brick Graves available.
  Concrete sectional boxes required.
  Likewise concrete or brick Crypts may be had to protect urns deposited in lots.

Rest Rooms - Waiting Room in Administration Building.
  Rest House near south entrance.
  Each Chapel has a room for Funeral Directors.
Mt. Auburn Cemetery contains: 1

- three large ponds
- a landscape garden - with sunken pool, concentric rose and perennial beds surrounded by plantings of flowering shrubs and trees
- approximately 8.8 miles of avenues and 11.5 miles of paths
- waterworks system - pumping station, 20 wells, and over 12 miles of underground drains and pipes
- Buildings: Administration Building; Story Chapel; Bigelow Chapel (includes crematory); Rest House; Service Building (with large assembly room for employees.)
- 10.3 acres including Gardener's house, greenhouse range, nursery, stone crusher, work and storage sheds.

1 Opus cited
Some of the Rules and Regulations of Mt. Auburn Cemetery: 1

- "Single grave" is grave 3' x 9' - 10' in lot owned by Corporation.
- Single graves or any number of adjoining single graves do not constitute a "lot".
- Purchase price includes perpetual care of grass only.
- Joint tenancy in single graves recommended for spouses. Other cases permitted.
- A vacated single grave reverts to the Corporation except that its purchase price will be valued toward the purchase of a lot.
- No planting on single graves sold after 1 June, 1945. Plantings on other single graves must be approved by the Corporation.
- Planting in sod prohibited.
- Plants, when permitted, must be confined to small approved beds.
- Potted plants and cut flowers permitted only at Easter, Mother's Day and Memorial Day. Removed within 5-10 days depending on type of container.
- Boxes, shells, toys, knickknacks, crockery, glassware, and similar ornaments or articles shall not be placed upon any grave and, if so placed, will be removed forthwith.

"- Lunching or picnicking in the Cemetery is strictly prohibited."

- Price of single grave permits burial of one body
  plus one cremated remains or two cremated remains,
or, if first body was buried doubly deep (at least
5' below surface of ground), two bodies. No body
may be less than 3' below surface of ground.

- Price of single grave does not include burial fee.
  Such fee is payable when burial is made.

Memorials - Confer with Superintendent before selection
of memorial stone. Superintendent must approve complete
specifications and a dimensioned scale drawing before
issuing permit.

Generally, headstones above grade not permitted on
single grave lots owned by Corporation. Must be one-
piece slab-stones centered on adjoining graves when
they are permitted.

Slab (A one-piece slab headstone centered on two adjoin-
Type{ing single graves shall not have face area of over
{seven square feet, a height of over 3'-4'', a length
(of over 3'-0" and a thickness of over 4''. Smaller
(sizes required for many lots.

Lawn (Of one-piece only (except when bronze tablet is
(Flush) Type (attached) and width not less than 8''. Stone marking
one grave shall not exceed 2'-0" in length by 1'-3" in width. One marking 2 graves not to exceed 2'-6" long by 1'-3" wide.

All lawn stones to be of medium or dark colored granite and to have slightly rounded or chamfered edges on upper surface.
The following shows how strictly regulated are Mt. Auburn Cemetery's rules for monuments, markers, and mausoleums. Though most well-run cemeteries maintain similar regulations it is doubtful that there are any more stringent. It is an extremely conscious conservatism.

- Use monoliths (one piece stone without base) on steep grades.
- Granite is preferred stone.
- "All monuments centered on main axis of lot."
- "No markers or headstones within two feet of monument."
- "The words 'Perpetual Care' shall not be inscribed on any memorial."

Foundations - Foundations for memorials to be solid concrete, 5' deep. Seven feet deep if grave or adjoining grave is extra deep. Seven feet deep in all single grave locations! (Good idea!)

Inscriptions - Name of family 4" high maximum (10% of height); individual names 2" high maximum, usually restricted to 1½". Sunken letters only on lawn-type stones.
- Variegated finishes discouraged.) etc.
- Highly polished finishes discouraged

- Base area not to exceed 6% of lot area.
Face area not to exceed 8% of lot area.
Overall face not to exceed 9% of lot area.
Length of base not to exceed 50% of width of lot.
Height not to exceed 20% of perimeter of lot.
Narrower dimension not to exceed 80% of wider dimension.
Narrower dimension not to be less than 35% of wider dimension.

<table>
<thead>
<tr>
<th>Area of Lot</th>
<th>Maximum Thickness of Die Stone</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 sq. ft. or less</td>
<td>8&quot;</td>
</tr>
<tr>
<td>125 plus sq. ft. - 200 sq. ft</td>
<td>10&quot;</td>
</tr>
<tr>
<td>200 plus sq. ft. - 300 sq. ft</td>
<td>12&quot;</td>
</tr>
</tbody>
</table>

- Height of Base stone not to exceed 8" for a tablet stone of horizontal form ( ).
In any case not to exceed some 17% of total height of monument. In cases of extreme ground pitch this may be 25%.

<table>
<thead>
<tr>
<th>Ht. of Die Stone</th>
<th>Maximum height Die Stone plus Base</th>
<th>Ht. of base above ground Without-Bevel-With</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'-8&quot; - 1'-11&quot;</td>
<td>2'-1&quot; - 2'-4&quot;</td>
<td>4&quot; - 5&quot;</td>
</tr>
<tr>
<td>2'-0&quot; - 2'-5&quot;</td>
<td>2'-5&quot; - 3'-1&quot;</td>
<td>4&quot; - 5&quot;</td>
</tr>
<tr>
<td>2'-6&quot; - 2'-11&quot;</td>
<td>3'-0&quot; - 3'-5&quot;</td>
<td>5&quot; - 6&quot;</td>
</tr>
<tr>
<td>3'-0&quot; - 3'-5&quot;</td>
<td>3'-7&quot; - 4'-0&quot;</td>
<td>6&quot; - 7&quot;</td>
</tr>
<tr>
<td>3'-6&quot; - 3'-11&quot;</td>
<td>4'-2&quot; - 4'-7&quot;</td>
<td>7&quot; - 8&quot;</td>
</tr>
<tr>
<td>4'-0&quot; - 4'-5&quot;</td>
<td>4'-8&quot; - 5'-1&quot;</td>
<td>8&quot; - 8&quot;</td>
</tr>
<tr>
<td>4'-6&quot; - 4'-11&quot;</td>
<td>5'-2&quot; - 5'-7&quot;</td>
<td>8&quot; - 8&quot;</td>
</tr>
<tr>
<td>5'-0&quot; &amp; over</td>
<td>5'-8&quot; &amp; over</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>
Headstones - One to a grave (for each 30 sq. ft. of lot)  
Aggregate area of bases not to exceed 1/4% of lot area.  
Triple headstones, etc., embracing more than two 
graves are prohibited.  
First stone put on a lot sets standards for those 
following.  
Maximum limits of one-grave slab stone:  
Maximum limits of two-grave slab stone:  
Lesser dimension must not exceed 90% of greater dimension.  

Ledger stones: one grave - 6 sq. ft. face maximum  
two-graves - 10 sq. ft. face maximum  

Markers - (Headstones)  
Maximum Dimensions  

Other markers to be of one piece and have thickness 
not less than 6". Distance from grade to top of 
front edge not more than 8".  

<table>
<thead>
<tr>
<th>Thickness or Width of Marker</th>
<th>Length or Root below Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 9&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>9&quot; and over</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>
Headstones (Single Grave)

Lawnstones

Maximum Dimensions

Strongly recommended that face surface have incised border about 1½" from each edge

<table>
<thead>
<tr>
<th>Thickness or Width of Stone</th>
<th>Length of Root Below Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 9&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>9&quot; and over</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>
Mausoleums and Columbaria (Private, Large): 1

Private mausoleum, etc. should have fund, deposited with Corporation, whose income will provide perpetual care.

- Minimum lot - 1200 sq. ft.
- No other stonework permitted on such lot
- Must not occupy more than 15% of lot area.
- Width not to exceed 50% of lot width.
  Shall be centered on rear part of median line of lot, not less than 6' from back line.
- Planting required
- Foundations - Concrete
  5' - 0" minimum depth
  2" wider on all sides than base of superstructure
  Finished 2" below grade at its lowest point.
  Waterproof cement used for at least 1'-0" below grade lines
- Walls - Cut stone, 10" minimum thickness
- Roof - Flat: one piece
  Pedimental: two pieces; one on either side of ridge coping.
  Ridge coping and back stones to be in one piece; also front cornice, where

1 Opus cited
practicable. Roof stones and coping to be let 3” into cornice and back stone. Eaves of all roof stones to have water drip.

- Linings – If marble or granite lining is used, wall pieces to be no less than 2” thick; properly doweled, cemented, and anchored to exterior walls. Ceiling and catacomb slabs not less than 1\(\frac{1}{4}\)” thick.

- Metal Work – all of standard bronze.

- Ventilation – Make provision for proper ventilation of mausoleums. Air spaces of not less than 1” provided between crypts and outside walls, with suitable air inlets or outlets at top and bottom.

- Crypts – Of reinforced concrete cast in place. Walls not less than 2\(\frac{1}{3}\)” thick. Shelves not less than 3” thick. Connect a drain to each crypt.

- Keys – Kept by Cemetery.

Tombs – Tombs built partially above ground on a bank may be only on large lots specifically designated.

1 Opus cited
- Designs, specifications, restrictions, and other requirements for such tombs shall, where practicable, follow those for a mausoleum or columbarium.
The following information is taken from Mt. Auburn Cemetery's Annual Report for 1951:

- Interments (1951) at Mt. Auburn Cemetery - 538
- Cremations (1951) at Mt. Auburn Cemetery - 488

538 interments

Bodies to:

<table>
<thead>
<tr>
<th>Lot Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lots</td>
<td>237</td>
</tr>
<tr>
<td>Single Graves</td>
<td>121</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>358</strong></td>
</tr>
</tbody>
</table>

Cremated Remains to:

<table>
<thead>
<tr>
<th>Lot Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Lots</td>
<td>93</td>
</tr>
<tr>
<td>Memorial Lots</td>
<td>1</td>
</tr>
<tr>
<td>Single Graves</td>
<td>5</td>
</tr>
<tr>
<td>Memorial Grounds</td>
<td>19</td>
</tr>
<tr>
<td>Private Niches</td>
<td>54</td>
</tr>
<tr>
<td>Urn Vault</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>

Number of Receiving Tomb interments - 1

The Receiving Tomb is a vault for the temporary storage of remains, until decisions, arrangements are made, etc.

- Improvements: (1951)

Perpetual care lots regraded, 6150 sq. ft.  27
Repurchased lots regraded, 5050 sq. ft.  13
Lots bounded with granite posts  36
New single graves laid out  18
Headstones erected  163
Monuments erected  52
Tombs removed and sealed  2
Curbings removed  11
Border pieces, buttresses, steps, etc. removed  4
Sq. yards of avenue treated  8,740
Tons of patching material used  11
Lin. ft. of drain laid  320
Shrubs and trees planted in cemetery  386

- Increases in labor costs mean watchful budgeting
  and supervision of maintenance work. A Sherman Power
  Digger might be worthwhile for grave digging.

- Fall-off in income due to transfer of a number of
  lots from annual care basis to perpetual care basis.
Although cremation procedure may vary somewhat from place to place, the following information on cremation at Mt. Auburn Cemetery can serve as typical.

Year: 1901 - 119 cremations
      1939 - 722 cremations
      1951 - 488 cremations

"On completion of funeral service in chapel, casket is wheeled on its catafalque to near-by elevator and lowered to Retort Room. Removal of metal handles and name plate. Pladed in retort without any disturbance of body. Incineration by means of clean flame augmented by large quantity of oxygen. 1\(\frac{1}{2}\) hours reduces body to pure bone and mineral ashes. Casket, etc., are consumed and passed off as invisible gases. Ashes ordinarily removed several hours later, but if necessary they can be delivered in c. 2\(\frac{1}{2}\) hours after body is received.

After cremation, Mt. Auburn will hold ashes in its vault for 3 months without charge.\(^1\)

1 Mt. Auburn Cemetery, Mt. Auburn Crematory, Cambridge, Mass., Mt. Auburn Cemetery, 1939

2 Opus cited
Massachusetts General Laws - Section 44, Chapter 114:

The body of a deceased person shall not be cremated within 48 hours after his decease unless he died of a contagious or infectious disease, etc., before cremation is allowed to commence.

Permit me to indicate at this point that, even if Orthodox and Conservative Jewry were favorably disposed toward cremation, this legal provision would prove to be an obstacle, since all observant Jews must be buried within 24 hours after their death unless the Sabbath should occur between death and burial, in which case burial takes place on the day after the Sabbath.

"In addition to the burial permit, medical examiner's certificate and transit permit (where the body is transported by a common carrier) as called for by the law (Mass. Board of Health), the Cemetery requires an order for cremation signed by the nearest relative of the deceased or whoever has legal possession of the body." ¹

¹ Opus cited
Mt. Auburn provides a Memorial Urn Garden, having bronze markers level with the ground. Also grave lots for urns and columbaria in chapels and administration building. Perpetual care included in prices.

.....alcoves of marble niches with panels of either bronze or glass. The bronze-front niches have a capacity of 2 - 6 urns. On each panel there is room for several inscriptions. The glass-front niches have a capacity of 1 - 3 urns that must be of approved design. (Italics my own) The commemorative inscription is cut on the urn itself. Also, the Urn Vault in the Administration Building has open stone shelves instead of niches. Cheaper.

"Because of its attractive luster or patina and its resistance to continued atmospheric action, bronze has been the preferred metal for the inurnment of cremated remains since 1200 B.C. when it was first used for this purpose."1

The Columbaria are open Monday through Friday 9:00 A.M. to 5:00 P.M. and Saturday 9:00 A.M. to 4:00 P.M. On Sundays and holidays they will be opened between 10:00 A.M. and 4:00 P.M. on application to the gatekeeper. Also open by special appointment.

Concerning columbaria, etcetera
at Mt. Auburn Cemetery: 1

- Cemetery usually gives order of preference determining whose remains (among a family) shall be rightfully inurned in niches.
- Cemetery will not allow any changes or additions to any niche or urn space.
- Cemetery sets rigid standards on design and material of urns; also on inscriptions, metal name plates, etc. not being permitted.
- Cremated remains removable only within the cemetery.

This last item may be misleading, for I am told by the administration of Newton Cemetery that as far as Mass. law is concerned, cremated remains may be disposed of in any manner, place, and time as long as such disposal does not create any public nuisance, hazard, etc. In California, however, cremated remains must be interred or inurned. It seems likely that such legislation might have been effected under pressure from the powerful, vested interests of the Hollywood-type "glamor" cemeteries!

The following are excerpts taken from a recent article on Danish cemetery planning.1 Besides giving some idea of the well regulated planning of Scandinavian cemeteries, the author draws some fine distinctions between national-cultural types.

"The growth of towns......made it desirable for the churchyards (graveyards) to be situated at some distance from the towns, and in 1805 a government order to that effect resulted in the laying out of the so-called 'assistance' cemeteries, divided so that each parish had its own section.

".....in 1870 Copenhagen had its first central cemetery, followed by other large cemeteries. Planned on German lines, and to a certain extent, placed outside built-up areas.

"All (cemeteries), however, have one feature in common - the use of green and flowering plants on the graves and in the setting for the whole area. (depending on local climatic conditions)

"......People want their lots to look like small, fenced-in gardens where they can potter about among the flowers. To the town-dweller it may be the only piece of land that he

1 Tholle, Johannes, Cemetery Planning in Denmark - A National Style, Boston, Mass., Landscape Architecture, Oct., 1948.
possesses, and it must be cultivated as was his childhood
garden in the country. In this way the Danish cemetery
is very unlike the Latin type, where the monument is the
principal feature, or the North American landscape type,
where the naturalistically planted lawns provide character-
istic background for the monuments.

"In addition to the areas which are divided into small,
enclosed sections, other areas are planned without hedges
and are developed on quite naturalistic lines.

"Until the beginning of the 20th century it was generally
the building architect who designed new cemeteries. This
work has now gradually passed to the landscape architect.

"In cemetery planning the landscape architect adopts the
dimensions and shape of the burial case as the basis for his
design. From its shape, which as a rule is rectangular, the
landscape plan of the cemetery on the whole takes the form
of small or large rectangular or square areas containing the
graves. These areas are enclosed by shrubberies, two yards
or more wide. The hedges or shrubberies, preventing the
areas from being overlooked, create enclosed gardens known
(by the name copied from Sweden) as graveyards.

"These graveyards may hold one of several hundred burial
places. The roads, laid out between the graveyards, will
thus be bordered by green hedges, which in extensive grounds
may be supplemented by avenues of trees. If the cemetery
is small, it may have only one graveyard: that is, the
whole cemetery is a single unit with the church as the
center of the tree-enclosed area. In large cemeteries the graveyards form individual units in the building up of the plan, which aims at giving an impression of austerity and distinction, thus distinguishing the cemetery from other public gardens of a temporal character such as parks. No standard has been set for cemetery planning; the natural conditions of the site, as well as other local circumstances, must affect the layout and must therefore result in a certain individualization.

"....., but Denmark has hesitated to follow the example of our next-door neighbor Sweden (and Germany), where they make the monuments uniform. A certain regularity of appearance has been introduced by statutory provisions against introduction of the too widely different monument, stipulating (1) a maximum height, (2) a certain position on the grave, and (3) suitable materials. In some places the authorities have gone further by allowing certain materials only, or by requiring that there shall be only horizontally-placed monuments in one part of the grounds, vertical in another. By differentiating between the monuments so that one type is used in one graveyard, and another type in the next, the individual graveyards will have a more harmonious character and will differ one from another so that people can choose a burial place where they can have just the material and type of monument they prefer. Individual wishes may thus be brought into agree-
ment to some extent with the architectural effort toward harmony.

"As a means of separating the graves and for the purpose of providing a background for the monuments, so-called back-hedges are planted. They run lengthwise along the rows of graves so that the monument placed at the rear end of the lot has at once a flattering and effective background. When the back-hedges are extended to form side hedges, thus isolating the monuments and the individual graves, they create an effect of privacy and at the same time of architectural planning.

"Each of the methods mentioned above strengthens the architectonic element in cemetery planning. (Italics my own)

"The landscape cemetery so popular in the U.S.A. is therefore not likely to gain much headway in Denmark, even though from a professional point of view the Danish landscape architects regard it as ideal that graves and monuments should be more widely separated as in America. While they realize the great aesthetic value of a design in which large areas of well cared-for lawn can be left intact, practical-economic and political-democratic principles will prevent such practices in Denmark.

"......but the grounds are still the property of the churches, with land both expensive and precious; and as we do not wish for too great a distinction between rich and poor (Italics my own) it is not possible to follow completely
the example set by the American private cemetery."

Those outstanding cemeteries and crematoria that I have seen in Scandanavia convinced me sometime ago that we here, too, have need of burial ground planned to high intensity capacity. It is time to let go the Olmstead-like parks and recognize that we must deal directly with the real and obvious. Since the colonial churchyard and the cathedral cloister satisfy us, there is proof indeed that high intensity burial can be accomplished without the inevitable esthetic insult of the stone orchard.
The customs of burial of the three major religious groups can be easily and speedily resolved in terms of a non-sectarian, municipal cemetery.

(1) There are no restrictive or inhibiting practices among the Protestant majority that would especially prohibit their use of such a cemetery.

(2) Although the common practice is for Roman Catholics to be buried in their own parish cemeteries there is no real reason that prevents their unrestricted use of a non-sectarian, municipal cemetery. Catholic burial must take place in consecrated ground, but that ground need not necessarily be a large all-Catholic tract. Individual graves can be consecrated by a priest at the time of burial, thereby permitting inter-spersal of the Catholic dead.

Cremation is forbidden to Roman Catholics except in time of plague or extreme catastrophe.

(3) The Orthodox and Conservative groups, constituting the mass of observant Jews are bound by their faith to be buried in a Bet Chaim (Literally: House of Life),
which is the Hebrew name for "cemetery". This means, in effect, that inter-spersal is out of the question and therefore Jews must be buried in a religiously homogeneous mass. Be that as it may, it is a religious point of difference and one that should not engender any discomfort or suspicion on the part of anyone (I have noticed such ideas spawning in the conversation of one cemetery administrator I consulted). The problem, if any, is easily resolved by separating the Bet Chaim by such a perfectly legitimate planning device as a ring road. No other restrictions are made by Jewish religious law. Administration and maintenance may be performed by anyone, non-Jews included. Cremation is forbidden to Orthodox and Conservative Jews.

I have been told that before the new Communist regime came to power in China some New England cemeteries would be visited every three or four years by a Chinese committee who would disinter the bodies of Chinese buried in those cemeteries. For that reason the Chinese burials were usually kept in one separate section. The visiting committee (it took them 3 to 4 years to make the rounds of
the United States cemeteries) would then set up a kettle, cook the flesh off the bones and send the bones back to China for final disposition in the land of their ancestors.

I feel that at this point a word, at least, should be said about funerary art. In our country we can already trace periods and trends. The upright slate and marble tablets of the colonial churchyards find aesthetic acceptance and the romantic "Gothic" types of the mid 19th century provide interest for the curious. However, the present day product, no matter how well it may reflect the spirit of the times, is woefully inadequate.

The epitaph is gone and symbolism is avoided, - at best one may find a sprig of stylized ivy carved into today's massive monoliths. The stones are usually much larger than they need be, and even the lettering shows that a lack of a love of the art exists. Perhaps this is just another manifestation of a trend of the times. Is it the "high cost of labor" that is making the artisan extinct, or is it merely that the "artisan" finds that he can cut corners, shave time, and produce a lesser article because of a general indolence in the attitude of purchasers who are just not sufficiently interested in the article they are purchasing?

Now then, along with suggesting a revival of epitaphery and a renewed interest in symbolism, I would suggest that those who are in need of a monument call upon the talents
and skills of the many young sculptors who would jump at a commission, modest as it might be.

It has always seemed to me that a very rewarding topic for a scholarly investigation would be that of funerary art as folk expression. I know of no modern work on this subject and would much like to attempt it myself. The only work I know that comes reasonably close is one by an Italian author and is much too restricted and "architectural".

We are all familiar with the extremes to which "popular" art can run, especially when the element of morbidity gains license.

"Few things are perfect; and beautiful and interesting as our rural cemeteries now are, more beautiful and interesting than anything of the same kind abroad,—we cannot pass by one feature in all, marked by the most violent bad taste; we mean the hideous ironmongery which they all more or less display. Why, if the separate lots must be enclosed with iron railings, the railings should not be of simple and unobtrusive pattern, we are wholly unable to conceive. As we now see them, by far the greater part are so ugly as to be positive blots on the beauty of the scene. Fantastic conceits and gimcracks in iron might be pardonable as adornments of the balustrade of a circus or a temple

1 Aloisi, Roberto, Archittetura Funeraria Moderna, Milan, Ulrico Hoepli, 1948.
of Coitus; but how reasonable beings can tolerate
them as inclosures to the quiet grave of a family
and in such scenes of sylvan beauty is mountain
high above our comprehension."1

1 Waugh, Frank A., Downing's Landscape Gardening, New York,
John Wiley & Sons, Inc., 1921, p. 373.
There is a happy little quatrain by William Auden, dedicated to Christopher Isherwood, that goes:

"Let us honour if we can
The vertical man
Though we value none
But the horizontal one."

The poem is cute and sprightly, but for all its likeability I think it can be challenged. We have valued the horizontal man in a very hollow sense. As it were, we have valued his being horizontal but we have not valued his horizontality!

Frank Lloyd Wright, too, has given some thought and vocal expression to the position of man:¹

1936: Room for the Dead

Lots for the Dead - I think these places we call cemeteries should be more pleasurable to the living as habitations for the dead, less dead to the living.

The first general curse on habitation for the living is placed there by the "realtor". It is the "lot", the interminable row of "lots", whereas an acre of ground to every house is the only sensible minimum now, if it never were before. Likewise, the realtor comes first to the cemetery, too. (Italics my own)

He seems to get everywhere first. The citizen, alive, gets a lot two by twice in some long row, and, dead, he gets another, as long as he is tall and as wide as

¹ Gutheim, Frederick, Frank Lloyd Wright on Architecture, New York, Duell, Sloan and Pearce, 1941.
he is long, when he is moved down and out. Or is moved out and down.

There is no sense in this realtor's curse in either case, and I believe if the resting places for the dead are ever to be made more beautiful, ground and plenty of it must be more sensibly and generously measured out for that purpose. The matter of improvement begins right there, and there is nothing much to do until the realtors are rounded up and most of them taken out and shot at sunrise.

Room for the Dead - These places we call burying grounds should be places to which we might go with no repulsion or dread, a blessing, too, instead of a curse on life. (Italics my own) And, I believe, this is all a matter of design; appropriate spaciousness in the first place, an intelligent use of materials in the next place. A fine sense of the whole, dominant.

If we are to be regimented in rows fifty feet o.c. while we are alive, for God's sake give us enough room to lie in, gracefully separate, and beautifully informal in arrangement when we are dead. This in order to have a little freedom to look forward to and a better sentiment toward death than we now seem to have. (Italics my own) Not that this would do us any good after we are dead, but because it would do us all some good while we are alive to see our loved ones
better treated at the last."

I agree with Mr. Wright and yet I disagree. I think that his last paragraph I have quoted is meant to be ironical. It must be. Surely there is every reason not to be regimented in rows fifty feet on center while we are alive, yet I believe there may be some reasons why we might be regimented when dead.

I personally think that it would be good could each man be buried in his back yard, but very few city ordinances would permit such a practice.

It would be nice to see a spot on a hill or in the middle of the city hall courtyard where one might want to spend eternity, but land use - land value practices being what they are, the masses must patiently wait and use their franchise every so many years.

Mr. Wright, I am inclined to agree with you; but, Mr. Wright, I believe that there can be a number of varieties of good and beautiful and valid cemetery forms. I am a firm believer in a variety of species and as a song popular in my early youth put it, - "It ain't what you do, but the way that you do it."

Mr. Wright's concern, "to see our loved ones better treated at the last", is reminiscent of Evelyn Waugh's satirical work in which he shows just how "well" one's
loved ones can be treated. There is such a thing as too much love; especially after the "loved ones" are dead!

Much as Frank Lloyd Wright abhors the rectangular planning module, there is evidence of an historic parallel between the rectangular burial plot and the rectangular house, (for good or bad) and I take this opportunity to quote:  

"Before the end of the first half of the Pre-dynastic period, the rectangular trench (as a burying place), like the rectangular house, (italics my own) appeared...."

While on the subject of the architecture of Ancient Egypt we might reflect upon two other important items noted by Professor Smith,

"Two persistent elements in the effort to thwart death directly influenced the history of the (Egyptian) architecture. They were the idea of worship at the grave (italics my own) and the desire that the occupant of the grave should be physically protected." (italics my own)

"While the lower classes continued to be buried in shallow trenches, the more prosperous and powerful members of the communities sought greater protection

1 Smith, E. Baldwin, Egyptian Architecture as Cultural Expression, New York, D. Appleton-Century Co., 1938, P. 25
2 Opus cited, P. 26
for their final resting place. (Italics my own) The rulers initiated new modes of tomb construction, and it will be seen what a passion their desire for everlasting security became." ¹ (Italics my own)

It is obvious, then, that psychological attitudes have not changed very much in 5,000 years.

Those cemeteries I have seen in Scandinavia were impressive to the point of inspiring this thesis. In those northern lands the art found in the cemeteries is not accidental. Our monument cemeteries and our lawn cemeteries do not meet the issue head-on. The former more often than not result in either a stony sterility or an ostentatious horror, while the latter are so often monotonous.

Gunnar Asplund's Stockholm South Burial Ground, Fritz Schlegel's Marienberg Cemetery in Copenhagen, and Lewerentz's cemetery in Malmo, Sweden, stand forth as fine examples of the architectural design sense applied to ordinary folkforms.

"...it has employed the woods for effect, perhaps even too thoroughly......the novelty, the greatness in the conception is the intensive feeling,

¹ Opus cited, P. 25
the concentration of atmosphere which it succeeds in imparting by a clever blending of art and nature.

"By excavation work, some of it very extensive, the ground was re-modelled in parts to form soft beautiful valleys. Between the trunks of the trees the burial ground grew up with its uniform low crosses and strictly restrained monuments."¹

I do not mean to discourage the use of monuments, but I feel that they require extremely sensitive handling. It is up to the administration and the designer of the cemetery to devise intelligent "zoning", as it were; to make full use of the natural features of the site by restricting (or, better say "encouraging") the several types of burial and marking to various parts of the land, thereby making full use of the esthetic and psychological potential inherent in the place.

It is interesting to what extent the basic principles of physical city planning can be applied to cemetery planning, but it is not surprising. The same criteria of form, transition, complementation, opposition, etc., apply because the problem is regardless a design problem.

In some cases it might be felt that monuments, for matters of curiosity and interest, should be free standing;

in other situations they might be backed-up (by trees, etc.), thereby toning-down their strong silhouette; or, they may be incorporated with structures.

Individually marked graves can be put into highly regulated, distinct blocks. Here, what I believe to be a perfectly logical simile can be made, - in our waking life we are faced with the problem of the storage of dead correspondence files. Letters must be kept for years and years and very seldom referred to. We build special rooms for them and give over to this practice expensive square feet of floor space. The obvious succeeding idea in this comparative mode of thought is to equate cremation to microfilming.

The idea of the system of intensification resulting in blocks of individually marked graves is not repulsive to me, because I know that such arrangements need not be unpleasing.

Still it is all a matter of the personal psyche, this designing of cemeteries, and because so many of the criteria fall in the realm of the subjective, it becomes quite a challenge. Too often we architects are merely willing to satisfy the objective and call that a "solution". A solution, yes; but often no more.

I should like to offer at this point some proposals concerning things funerary. These opinions are highly personal and somewhat subjective though I feel that I have
been close enough to the subject now that there may also be something of objective value included.

One is that the practice of viewings be discontinued, thereby sparing much heartache to the bereaved and obviating the dubious necessity for make-up, etc. Orthodox Jews follow this practice of the closed box and it is never opened for any reason.

Another practice of Orthodox Jewry that I feel I can recommend is that of quick burial, (within 2½ hours of death).

I would propose that all funeral services be held in houses of worship, preferably in chapels built in cemeteries expressly for that purpose.

As concerns cremation, - I personally cannot see the practice of interring or inurning cremated remains. I strongly favor dispersal of the cremated remains, or, at the most, unmarked burial of same.

I do not believe in the use of mausolea, and I do favor simply marked earth interment in the simplest coffin.

The "simplest" coffin might well be a plastic job in these days rather than the classic pine box. The weight, workmanship, and cost of the usual casket today is absurd!
The Problem
It was decided to "do" a cemetery as a thesis. The first thought was to design a cemetery for the city of Cambridge; firstly, because I had heard that they were in need of a new cemetery, and secondly, because of the ease in procuring the necessary information and aid.

I discovered that sixty years ago Cambridge had investigated some thirty acres of land in South Acton, a considerable distance from the city. To date nothing had been done towards acquiring a new site except for an attempt to purchase a piece of land of one or two acres adjoining the present Cambridge Cemetery. This piece of land is owned by Mt. Auburn Cemetery, whose proprietors ask fifty cents per square foot as the purchase price. Cambridge is still without a new cemetery site.

Somewhat dismayed by the cemetery state of affairs in Cambridge, I turned my attention toward nearby small cities, Brookline among them. I found that these towns were well set up concerning their cemetery needs.

Being pressed for time, I decided to give as little time as possible to the selection of a site. All within reason, of course. Having learned that after the crash of 1929 a number of defunct golf clubs sold their lands, I decided to survey the local scene for a golf club that would make a good cemetery. A golf course is well-suited to an easy transition into a cemetery: the turf and
grass of the fairways are already well developed; trees are treated as landscape features and are usually quite mature; and the various bunkers, teeing-off places, traps, and ponds can sometimes be retained as good landscape features. Also, the grounds are usually well provided with drainage and watering systems.

An investigation of the area south of Boston showed that there are at least four golf clubs near highway route 138, near the town of Canton. Two of the four clubs are of the daily fee variety while the other two are of the membership type. I chose the smaller of the two latter to work with.

From this point on the problem, in certain aspects, began to become strongly hypothetical. Visiting Mr. Paxton, Director of Public Works for the town of Canton, I learned that there was no actual need for a new cemetery. However, I also learned that the town of Canton hired a superintendent for its cemetery at $3500.00 per annum; that outside help had to be hired for the digging of graves and major maintenance chores; that only thirty-one interments had been made in 1951; and, last but not least, the cemetery had cost the town $12,000 that year.

In other terms that meant many of Canton's citizens were being buried elsewhere; that Canton's Catholics and Jews were not using the municipal cemetery; that every inhabitant of the town, no matter where he was buried, was paying well over a dollar a year in taxes for the
maintenance of the cemetery; and, lastly, that a sizeable portion of the municipal funds were being put into an item that only realized returns of singularly peculiar nature.

I propose then that the three towns, Canton, Milton, and Randolph band together for the purpose of maintaining a joint cemetery for the three cooperating municipalities.

The site proposed is a matter of minutes from any of the three towns.

These municipalities would purchase the property of the Milton-Hoosic Golf Club (formerly the Hoosicwhisick Golf Club).

Once a cemetery is set-up on this site the three municipalities would cooperatively employ a clerical-administrative staff of two persons plus a maintenance crew of two or three men to serve on the site.

One feature that I think could be integrated with the cemetery as a public feature would be a reading room. The reading room would be a music-poetry library and would serve as an introduction to the cemetery grounds. In this way the cemetery could be enjoyed as a quiet park that is a restful public facility. This would call for the employment of one more person.

The cost of maintaining such a force is set up below. I believe that I have been somewhat generous in the salaries, compared with the current rates of the locality. In that
case, the figures can be adjusted downwards. There is a possibility that the administrative staff could get along with only a part-time secretary, and that the maintenance crew would use a third man only in certain seasons of the year. Also, the salary of the librarian could be assumed by the town of Canton alone if it is found that the function of the music library is strictly local. In that case a working arrangement could no doubt be made with the present Canton public library staff.

Clerical-Administrative

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Superintendent</td>
<td>$4500.00</td>
</tr>
<tr>
<td>1 Secretary</td>
<td>2500.00</td>
</tr>
</tbody>
</table>

Maintenance

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chief Groundskeeper</td>
<td>4000.00</td>
</tr>
<tr>
<td>1st Helper</td>
<td>3300.00</td>
</tr>
<tr>
<td>2nd Helper</td>
<td>2800.00</td>
</tr>
</tbody>
</table>

Music Library

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Librarian</td>
<td>3000.00</td>
</tr>
</tbody>
</table>

Total - $20,100.00 a yr.

To be sure, this is more than $12,000 per year and if the cost of materials, equipment and specialities is included, the annual bill for the cemetery is bound to be more than $20,000. However, it must be borne in mind that Canton now pays $12,000 per annum and its population of some 7000 amounts to less than 1/5 of the total of 40,000 for the three cooperating municipalities. Still, it can be assumed that Canton would be willing to meet more than
their 1/5 of the cost (based on population), since the cemetery as a public park facility would belong more to it than to the other two towns.

Nevertheless, the site is at Canton's northern edge and may be considered the centroid of a triangle whose vertices are Milton, Randolph, and Canton.

The population figures for the three towns to be served are as follows: 1

<table>
<thead>
<tr>
<th></th>
<th>1950</th>
<th>1940</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canton</td>
<td>7,465</td>
<td>6,381</td>
</tr>
<tr>
<td>Milton</td>
<td>22,395</td>
<td>18,708</td>
</tr>
<tr>
<td>Randolph</td>
<td>9,982</td>
<td>7,634</td>
</tr>
<tr>
<td>Totals</td>
<td>39,842</td>
<td>32,723</td>
</tr>
</tbody>
</table>

The costs of maintaining the cemetery can be distributed proportionately. It can be seen that Milton is growing at the most rapid rate with Canton growing the least. However, it will be noticed that the increase in the total population is commensurate with the increase noted in Milton's population.

We therefore begin to get a comparative facsimile of the practice of a larger town (or organization serving the

larger town) buying ground for a cemetery in a neighboring small and slower growing town. Yet we can appreciate the cooperation in the system we propose - whereby each town gets full use of the cemetery plus the fact that the cemetery is conveniently located at a reasonable distance from each town's center.

Lewis Mumford puts it very nicely, this business of the remoteness of the cemetery:¹

"As the pavement spreads, nature is pushed farther away: the whole routine divorces itself more completely from the soil, from the visible presence of life and growth and decay, birth and death: the slaughter house and the cemetery are equally remote, and their processes are equally hidden. The ecstatic greeting of life, the tragic celebration of death, linger on merely as mumbled forms in the surviving churches."

The quaint old cemetery, full or no longer used, - which I shall call "passive" is not strange to us. And we know how effectively they can be used as green space. It was my experience while working in the National Planning Authority in the Prime Minister's Office of the State of Israel to help re-plan the town of Yivneh, south of

Tel-Aviv. The town had formerly been entirely Arab and was now to receive 12,000 new immigrants. At the town's existing centrum there was an Arab graveyard, and since Israeli law guarantees the protection of such places, it was decided to maintain it as a green spot in the city's center, surrounded by lazy tavern-cafes.

But I feel that this is not exactly what Mumford means. As would happen in the Canton-Milton-Randolph cemetery, his ideal would be a functioning element that would not be so large or mono-utilitarian as to lose both its physical scale and its functional scale.

I estimate that the combined populations of 40,000 would yield an average of ten deaths per week, say 500 per year. A conservative estimate of a total cemetery population of 40,000 at the saturation level would mean that this site of some 62 acres would have an active life of 80 years. Of course we must assume that these towns may grow considerably. Even if the total population of the towns should double in that time, the cemetery would still have an active life of some 40 years in addition to the long and theoretically limitless passive life it should lead as a public park-library facility.

By religious law the Jews of Canton, Milton and Randolph would have to be buried in a separate Bet Chaim.
The Jewish populations of these towns in 1946 was:

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canton</td>
<td>100</td>
</tr>
<tr>
<td>Milton</td>
<td>400</td>
</tr>
<tr>
<td>Randolph</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550</strong></td>
</tr>
</tbody>
</table>

My estimate for 1951 would be:

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canton</td>
<td>125</td>
</tr>
<tr>
<td>Milton</td>
<td>600</td>
</tr>
<tr>
<td>Randolph</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>800</strong></td>
</tr>
</tbody>
</table>

I have granted Milton the highest proportional increase because, as far as I can determine, that town's Jewish population is now rising rather quickly, drawing upon the Jewish communities of Roxbury and Dorchester. Perhaps I have been a bit too conservative in the Milton estimate.

These figures mean that the Jews of Canton, Milton, and Randolph amount to 1/50 of the total population. This indicates that of a 62 acre site the Bet Chaim would be entitled to about 1.2 acres. The allotment should be larger than the 1.2 acres indicated because the nature of the Bet Chaim is that it should be separated from all other burial tracts, and should the Jewish communities increase other than in the present proportion, it would be awkward.

1 Headquarters, United Jewish Appeal, Boston.
and difficult to augment the Bet Chaim.

This, I feel, is a good place to recommend again that all funeral services take place at the cemetery chapel. The funeral director's establishment serves well enough as a mortuary, but as a chapel it is insufficient and results in an awkward, shabby mess. The European practice is to have a mortuary in conjunction with the funeral chapel at the cemetery. I am opposed to this and would favor all mortuary work being done at some intermediate station between the point of death and the place of formal leave-taking.
The Site
"A site should be selected with the same judgment which has already been shown by the cemetery companies. It should have a varied surface, a good position, sufficient natural wood, with open space and good soil enough for the arrangement of all those portions which require to be newly planted.

"Such a garden might, in the space of fifty to one hundred acres, afford an example of the principal modes of laying out grounds, thus teaching practical landscape gardening. It might contain a collection of all the hardy trees and shrubs that grow in this climate, each distinctly labelled, so that the most ignorant visitor could not fail to learn something of trees."¹

So writes our mentor of the landscaping arts, Downing, in the early 19th century, and it would be wise to follow his counsel. The multifunctional municipal cemetery could act as a limited horticultural museum. If there are no rare or exotic specimens that is still not too bad. Enough would be accomplished were the good townsfolk able, as a result of this provision, to identify even the native species.

The site I have chosen consists of some 60 acres and

lies south of and along Green Lodge Street, six-tenths of a mile west of the intersection of that road with Massachusetts state highway 138.

The site is presently the golf course (9 holes) of the Milton-Hoosic Golf Club, which was formerly the Hoosicwhisick Golf Club.

The grounds are kept in splendid condition, the turf and grass being excellent, and the many mature and young trees are well kept. There is an extensive system of drainage and water pipes for sprinkling the greens.

The southern boundary of the site is the Ponkapoag Brook near which the ground becomes slightly marshy. The long axis of the site is intermediate between and parallel to Green Lodge Street and Ponkapoag Brook. The ground slopes down, generally, from Green Lodge Street to Ponkapoag Brook. Some land on the other side of the brook, formerly belonging to the Milton-Hoosic Golf Club has been sold for rather low-density housing, but there is a considerable amount of buffer vegetation isolating the site from any neighboring tracts. Even, along the Green Lodge Street boundary there is a line of tall mature trees and a low stone wall separating the property from the road and fairly well obscuring the view from the road.

Even now there is considerable wildlife on the grounds: squirrels, rabbits, woodchucks, chipmunks, muskrats, turtles, frogs, and a variety of birds.
There are a number of ponds with wild aquatic flowers near the brook.

Ledge has never been encountered by the greenskeeper.

It is fortunate that so well-landscaped a site can be utilized. In its present state it can be immediately used for cemetery purposes, granting the opportunity for the steady development to the completed level of the master plan. Of course there would be an intermediate stage while new groves are maturing and some luxurious existing growths were being thinned so as to be used for burial purposes.

The existing green sward serves to relieve the woodland fringes and the groves, and, in addition to serving this vital visual purpose, it can be utilized for unobtrusive "lawn" type burials.

The existing ponds, too, can be developed into delightful water features that can add visual variety and relief.

In the case of this particular piece of land I would change as few land and vegetation features as possible. Plastically, it is already a well-composed site, and I believe that in such cases as this it is sometimes better to work with a towering 50 year-old tree than to plant a sapling and wait through 50 years of intensive cemetery use for that tree to finally reach its mature status in a completed composition.

In Peacock's novel, Headlong Hall, the famous English landscape architect, Repton, is put into the
character of Mr. Milestone. Christopher Tunnard in his book, Gardens in the Modern Landscape excerpts some conversation which runs like this, -

"Squire Headlong: Miraculous, by Mahomet!
"Mr. Milestone: This is the summit of a hill, covered, as you perceive, with wood, and with those mossy stones scattered at random under the trees.
"Miss Tenorina: What a delightful spot to read in, on a summer's day! The air must be so pure, and the wind must sound so divinely in the tops of those old pines!"

Peacock goes on, having Mr. Milestone assure Miss Tenorina that her suggestion is in bad taste and that he will improve the spot by cutting down all the trees, clearing away all the stones, and placing an octagonal pavillion exactly on the centre of the summit.

I have usurped the excerpt to support my contention that the cemetery as good and pleasant landscape would serve as a splendid retreat in the nature of a small reading room, say one of a rather specialized and esoteric sort; a poetry and music library, for instance.

And in the distant future, when the cemetery ceases its active receiving function, the reading room and unspoiled grounds would still be there for many Miss Tenorinas.

Tunnard takes up two other items that we usually associate with the more formal landscapes of centuries past:

"If we are still to have long vistas with focal points, we shall find that they are better provided with simple terminals like stone columns or non-representational and geometrical forms in stone, concrete, metal or wood." 1

and,

"Sculpture, which relies for its appeal on intricacy and subtlety of detail, is best placed in relation to plain undecorated surfaces such as walls, level lawns or water." 2

As concerns the first point, I am very much in agreement with the use of non-representational forms, and I would go even beyond and suggest that a brick wall be used, like those with which I have experimented. 3

As for the second point, sculpture is a broad term, and I don't believe that all sculpture need rely on detail.

1 Opus cited
2 Opus cited
3 The illusion of three dimensionality and color change was achieved by varying mortar color, although retaining the exact same brick throughout the wall.
The following landscape maintenance hints, aside from serving their primary informative purpose can be used in the thoughtful long range planning of a landscape project; especially when in a project like a municipal cemetery, the maintenance appropriation is always liable to reduction.

Elements requiring most maintenance work are:

a. Lawn—particularly in its more refined tapis vert forms, in small areas and complex shapes with edges difficult to trim.
b. Annual and perennial flowers
c. Trimmed hedges
d. Trimmed shrubs and trees
e. Plants requiring special soil, continuous watering, continuous spraying for pests

The low maintenance answers to these are:

a. In small spaces, substitute ground covers, such as ivy and periwinkle, or paving for grass, except where you want it to walk and sit on. In areas large enough for power mowing grass is still the most practical and pleasant surface. At that scale, detail of mix is less important, intruders can naturalize, edges can be rough, mowing keeps both weeds and grass down, water and fertilizer keep the grass healthy.
b. For color and enrichment concentrate on relatively permanent perennials—such as geraniums

and day-lilies - or colorful shrubs and trees, structural elements, sculpture, murals, etc.
c. d. Study plant growth to avoid laborious and deforming trimming, by selecting materials whose ultimate natural size and shape will be correct. Most plants, however, require occasional careful and intelligent pruning.
e. Skip these unless you can care for them.
The Buildings
What shall the buildings for a cemetery be like? There are buildings for that special piece of ground the old Anglo-Saxons called 'God's Acre'. Then, we can say that this is God's building, - our temple dedicated to God.

The immediate reaction is, categorize cemetery buildings into "Buildings, religious", and funeral chapels into "Churches".

Funeral chapels are churches of course, - it is only a matter of scale.

And yet, paradoxically, it is a matter of scale and it is not a matter of scale. To reduce the physical scale of a church building and call it a funeral chapel is architectural poltroonery. Certainly there must be a difference in scale, but it is a difference of psychological scale, of emotional scale and form and manifestation.

That is why I would favor a funeral chapel that takes advantage of the spacious scenic qualities of the locality of the site and permits the mourner to look out and beyond, - out and beyond his dead friend; to know that life is temporal and that magnitude loses itself in infinity. The lightness, the openness, the reticence of the building must enable him to look beyond (sometimes without even looking "out") and appreciate eternity.

following
Three excerpts from an appraisal of Gunnar Asplund's

great work, The Woodland Crematorium of Stockholm, illustrate his efforts to capture the special absolute quality:

"The peace which passes all understanding, he has succeeded in bringing to life in outstanding fashion, at least in the exterior of the building. It is perhaps the absolute absence of all dynamic elements, the avoidance of all contrast effects, the deliberate elimination of the border lines between bearing and resting parts that have produced this effect of something unreal, of an exalted calm not belonging to life on earth."

"The Woodland Crematorium, it is true, in its outer form is severe, apparently even Spartan, but it is an extremely aristocratic restraint." (Italics my own)

".....the chapels of the crematorium have not the character of any faith, are not linked to any church tradition..... It is not preaching that one needs in the dark hour of farewell, but tranquillity and reconciliation."

"..... See how the striving to avoid contrasts has been followed..... One can see the intention by soft transitions between horizontal and vertical plane, by uniformity of material and color to avoid everything that is conspicuous and too concrete, to create a space rather than a hall."
"...A disturbing detail in the big chapel is the organ. It is natural that the architect should be attracted by the mystery of the organ mechanism and it does honor to his ambition that he has wished to present the organ as a real instrument and not as a facade. But the desire to demonstrate has shown itself too obviously."

Another appraisal has given an indication of the subtley and considered thought that Asplund put into the planning of his crematorium.

"For each of the three chapels...there is provided a family waiting or retiring room which, through its windowed wall, looks out on a peaceful walled garden - private, quiet, beyond the reach of the eyes of others. The plans and seating arrangements of the small chapels are thoughtfully worked out so that when only a few friends are gathered, there is no sense of emptiness; yet a rearrangement of the seating and full use of the space can accommodate as many as one hundred."

An interesting note is the following, taken from a British book published in 1931. It gives some standards for crematoria in England and I daresay that some of the

1 Pencil Points, Forest Cemetery Crematorium, New York, Pencil Points, December, 1945.
dimensions given (those of the "furnace chamber") seem somewhat excessive in the light of present-day American practices.

"Plans for crematoria in England must be approved by the Local Government Board under the Act of 1903. They must be 600 feet away from any dwelling, and 150 feet away from public highways.

"A large chapel or hall has as its climax the catafalque (12' x 3'-9" wide x 4'-0" high), which usually abuts against the wall of the cremating chamber. Either a roller apparatus passes the coffin through an opening in the wall on to the carriage inside the chamber or else the coffin is lowered through the table of the catafalque into a chamber below. The size of the latter depends on the number of furnaces; that at Golder's Green where there are four furnaces, is 62' x 40'. A minimum size for one furnace, placed 10' back from the wall of the chapel, would be about 25' x 20' wide. Minimum internal diameter of chimney shaft would be about 2' x 2', and height 50' to 60'. A large coke storage is necessary, as one ton of coke is consumed for each cremation."

The chapel-crematorium is not necessarily the only cemetery building type. Others encountered are the administration building, the storage-and work sheds, the
greenhouses, etcetera.

There are also some pseudo-buildings, such as the shrine, the pavilion, the plaza, the portal, etcetera.
The Program
The following program material is offered as a general guide. Strict adherence is not especially advised and the use of any (or all) of the elements is optional.

Provide for the following Grave Types:

Marked Graves

- Graves with monuments of free standing type; regulated, but not strictly regimented. In tree groves; in the open; in some certain designated locations.

- Graves with monuments incorporated into highly regulated incorporating elements such as walls receiving plaques, etc.; some in well defined and regimented blocks.

- Lawn type burials with flush plaque markers.

- Graves and monuments of famous or important persons in certain specially designated locations.

- Special feature for graves of war dead (incorporated with Memorial feature).

Note: The above apply to the interment of cremated remains as well as bodies.

Unmarked Graves

- Graves in certain areas whose exact locations are known only to the administration and are in no way marked. This idea has been used for the burial of cremated remains in Denmark. It may appeal to non-squeamish free-thinkers and the area could be used as free, open, park space. It could also receive bodies as well as cremated remains.

- Disposal areas for the scattering of cremated remains.
Ponds, woods, etc., can be used for this purpose.

Mausolea and Tombs
- Kept to a bare minimum and as inconspicuous as possible.

Columbaria
- In conjunction with chapel.

Memorial Plaza
- Plaza with some symbolization of war dead. Burial of war dead may be in conjunction with this feature.
- Nearby parking is recommended.

Chapel-Crematorium
- Chapel
  . Auditorium
  . Minister's Room
  . Family Room

Note: Minister's Room and Family Room require toilets, which may be separate or combined.
  . Toilets
  . Vetibule
  . Porches
  . Parking - 30 automobiles min. (50-60 better)
  . Conservatory
  . Columbarium
  . One or two utility rooms (for funeral director, mechanical equipment, etc.)
- Crematorium
  - Committal Chamber
  - Retorts - two
  - Work Area
  - Office (Receiving, etc.)
  - Mechanical Equipment Space

Administration Building
  - Reception and clerical office
  - Director's office - toilet
  - Record file room - expansion space
  - Waiting space
  - Toilets
  - Parking - 6 automobiles or less
  - Utility Space.

Maintenance Buildings
  - Garage (jeep, truck, power digger and tractor)
  - Storage (mowers, equipment, tools)
  - Toilet
  - Utility Space
  - Greenhouse structures
  - Cold frames
  - Piling and dumping areas for humus, fertilizer, compost, etcetra.
  - Piling area for topsoil, turf, etc.

Library Building
  - Reading room (possibly some private listening rooms)
- Storage - Work room
- Office
- Toilets
I have inserted, in this section on The Program a program published some time ago by the Beaux Arts Institute of Design. This bit of addenda is included in addition to my own rather fluid program set forth above as somewhat more than a mere curiosity culled in research; but like many Beaux Arts programs of the time it indicates no more of the spirit of the problem than a few room sizes. And, after all, room sizes are not, ultimately, the most important information necessary to the intelligent solution of an architectural problem!

"Upon arrival at a crematorium the funeral cortege is usually conducted to the chapel where the funeral service is held. After the service the coffin is taken to the crematory chamber where it is slowly rolled into the retort. The law requires that cremation shall take place on the day of arrival and as the time taken for incineration is about two hours it is necessary to have several retorts. After the cremation the ashes of the deceased are placed in an urn. The urn may then be temporarily or permanently placed in a niche of the columbarium.

1 Beaux Arts, A Crematorium, New York, Beaux Arts Institute of Design Bulletin, February, 1932

2 Footnote: It seems that this requirement is not mandatory in this area. For instance, there is in the crematorium-chapel of the Newton Cemetery, Newton, Mass., a "slumber" room (egad!) for bodies that are delivered the day before their scheduled cremation time.
"The requirements are:

A. A chapel with seating capacity of one hundred with its robing room.

B. A cremation chamber which shall contain five retorts with a bronze door to each. Each retort will require a space 7' x 8' with a working space in the rear of about 12' deep. One smokestack will be sufficient.

C. A columbarium which may be a room or open court with arcades, to contain a great number of niches about 16" x 20" for the smaller urns. Larger niches shall be provided for more monumental urns.

D. In addition to the above requirements, there shall be the following minor elements: An office, guard rooms, salesrooms for urns, waiting rooms, and toilets, etc."
Indications
of
Costs
Cost Data
It is my intention to give, in this section, an indication of the financial items concerning the construction and operation of a cemetery. However, because of the time limitation, I am afraid that the data herein given must serve as inference rather than conclusion.

The subdivision headings read "Cost Data" and "Cost Analysis".

The term "Cost Data" is herein used to distinguish the income the cemetery might derive were it to employ a schedule of fees comparable to those used by Mount Auburn Cemetery, Cambridge, Massachusetts. Therefore, for the reader's edification, I have included an abstract of their fee schedule. However, it is my sincere hope that a municipal cemetery, counting on its citizens and government for security and support, would see fit to lower its charges to an absolute minimum level and operate on a non-profit basis in the strictest sense of that term.
Schedule of Fees
Mount Auburn Cemetery
Cambridge, Massachusetts
Property Costs

Single Graves:

   Basic price range $150 - 175
   (+$25. extra if to take second body)

Burial Lots:

   3 Graves $475 - 550
   10 Graves 1400 - 1700

Cremation Lots:

   Basic price range $325 - 625
   (Double normal number of remains permitted at
    $25. per remains)

Small Cremation Lots - called "Memorial Urn Garden"
   (2 remains limit) $125 - 140

The above charges include perpetual care of graves.

Space in Columbaria

   from $75. for 1 remains
   to $350. for 6 remains

Space in Urn Vault

   Single urn (7" or less in diameter) - $40.
   Double urn (over 7" in diameter) - $60.

Prices of Urns

   from $15. for copper and $22. for marble to
   $336. for bronze.

1 Schedule of Burial Plot and Niche Prices, Cambridge, Mass.,
   Mount Auburn Cemetery, October, 1949.
Service Charges

Earth Interment of Body

from $45. for infant (1 April to 30 November)
to $75. for adult (1 December to 31 March)
higher charges for larger sizes

Interment in ground of cremated remains ranges from $15. to $23. depending on time of year.
Interment in niches is $5. and in Urn Vault, $3.

Cost of brick graves (depending on size) $50. - $80.
Cost of concrete vault 80. - 85.
Cost of concrete crypt, single 20. - 25.
Cost of concrete crypt, double $30.

Cost of Cremation and Record

from $25. for infant to $50. for adult.
Medical examiner's fee - $7.00

Use of Chapel (for 2 1/2 hours)

Weekdays $25.
Saturdays 30.
Holidays 30.
Holidays with interment elsewhere $40.

Estimated Income for Canton-Randolph-Milton Cemetery

40,000 Remains

Empirically:

Interred Bodies - Family Lots

5000 Remains in Family Lots

. 70% - 3-5 graves @$600/lot, average;

\[
\frac{70\% \text{ of } 5000}{4} = 875; \quad 875 \times 600 = 525,000
\]

Plus $50. average interment charge per each remains; 875 x 4 = 3500 remains

\[
(70\% \text{ of } 5000); \quad 3500 \times 50. = \quad 175,000
\]

700,000

.20% - 6-8 graves @$1100/lot, average;

\[
\frac{20\% \text{ of } 5000}{7} = 143; \quad 143 \times 1100 = 157,300
\]

Plus $50. average interment charge per each remains; 143 x 7 = 1000 remains

\[
(20\% \text{ of } 5000); \quad 1000 \times 50. = \quad 50,000
\]

207,300

.10% - 9-10 graves @$1600/lot, average;

\[
\frac{10\% \text{ of } 5000}{9.5} = 53; \quad 53 \times 1600 = 84,800
\]

Plus $50. average interment charge per each remains; 53 x 9.5 = 500 remains

\[
(10\% \text{ of } 5000); \quad 500 \times 50. = \quad 25,000
\]

109,800

Sub Total \[1,017,100\]
Interred Bodies - Single Grave Lots

30,000 Remains in Single Grave Lots

30,000 graves @ $163/lot, average

30,000 x $163 = $4,890,000

Plus $50 average interment charge per each remains; 30,000 x $50 = $1,500,000

Sub Total 6,390,000

Item: Each remains requires a sectional concrete vault to receive coffin, preventing settling of grave bed. Average cost is $80; therefore

30,000 x $80. = $2,400,000

Sub Total 9,790,000

Cremated Remains - 5000 total

500 (10% of total 5000) remains in larger family lots, averaging four remains per lot, @ $500/lot, average.

500 x $500 = 62,500

Plus $20 average interment charge per each remains; 500 x $20 = 10,000

72,500

500 (10% of total 5000) remains in Columbaria niches, averaging three remains per nich, @ $200/niche, average.

500 x $200 = 33,333

Plus $5 niche interment charge per each remains; 500 x $5. = 2,500

35,833
4,000 (80% of total 5,000) remains in small cremation lots, averaging 1.5 remains per lot, @ $132/lot, average.

\[
\frac{4,000}{1.5} \times 132 = 452,000
\]

Plus $20. average interment charge per each remains; 4,000 x $20 = 80,000

Item: Cremation and record charge ranging from $25. for infant to $50. for adult. Assume $47. average; therefore, 5,000 x $47 = 235,000

Item: Interment of cremated remains requires a sectional concrete crypt to receive receptacles, preventing settling of grave bed. Average cost is $20; therefore, 4,500 x $20 = 90,000

Sub Total 965,333

Total: $1,017,100 + $9,807,100 + $965,333 = $11,789,533

It is assumed that 75% of the funeral services will be held in the cemetery chapel. A $26. average charge would not be unusual. If this charge were made (as I would not recommend), the income derived would be as follows:

75% of 40,000 = 30,000

30,000 x $26. = $780,000

This would certainly more than pay for the cost of the construction of the chapel-crematorium!

I might here indicate that it is my strong recommendation that double burials be made in graves whenever possible.
That is, the first burial is made two feet deeper than usual in order to receive a future burial on top of it. For this service of extra deep burial in the first instance there is a charge of $25. In addition, there is the usual interment charge for the second burial, averaging $50. Assuming that 60% of the graves would receive a second body, this practice could yield 60% x 30,000 x ($75 + $80), the $80 figure representing the cost of the required sectional concrete vault. The product of the above operation would be $2,790,000.

Also, considering that 75% of burials would have funeral services at the cemetery chapel (75% x 60% x 30000 x $26 chapel charge), the $2,790,000 figure given above could be increased by $351,000.

Applying this same system to those cremated remains buried in the larger family lots for cremated remains, the situation would be:

60% x 500 remains x ($25 + $20 + $10).

The $25 figure represents the charge made for making the first interment extra deep; the $20 figure represents the interment charge for the second remains; the $10 figure represents the differential between the $20 cost for a single required sectional concrete crypt and the $30 cost for a double required sectional concrete crypt. Therefore, the product of the above operation would be $16,500. Please note that in considering cremations throughout this analysis
I have taken the $47 average cremation charge to include the use of the chapel for services.

Therefore, by "doubling-up" on interments (up to 160% of single-level burials) the revenue of the cemetery could be increased another $2,806,000, and the "active" life of the cemetery could be increased by 40 years or so. In this instance I have not included the $351,000 item noted above that could be earned by chapel funeral services were a charge made for this facility. In the event funeral charge services were made the grand total revenue of $1,131,000 ($780,000 + $351,000) resulting therefrom would be sufficient to amortize the cost of all structures on the cemetery grounds and establish a fund for their maintenance.

Let it be noted that, for normal operating services, the cemetery could, eventually realize an income of $14,595,533 ($11,789,533 initial income plus $2,806,000 derived from "doubling-up"). These figures do not include the special gardening and monument-restoration fees that would normally provide an item of income to set-off the maintenance costs required for the continuous perpetual operation of the maintenance crew.
Cost Analysis
This section is intended to indicate the amount of money necessary for the construction of the cemetery. I have included therefore some unit cost information resulting from the construction of a municipal cemetery in Florida to serve as a guide.

It is my intention to apply this yardstick along with the necessary adjustments, to the subject of this thesis in order to determine the approximate cost for the creation of the hypothetical Canton-Randolph-Milton Cemetery. However, due to the fact that this written portion of the thesis project is being submitted prior to the presentation of the results of the architectural study (as required by the Massachusetts Institute of Technology), I find it impossible to make a valid estimate of construction costs. And, as a result, I have refrained from attempting any such estimate, although the application of the sample set of costs to the problem is obvious, requiring a mere mechanical adjustment.

Should it be my good fortune to find it practicable to do an estimate of costs once the architectural study has been finally resolved, I shall certainly do so.
Cost Data for Construction of Lauderdale Memorial Park, Municipal Cemetery of Fort Lauderdale, Florida. 1

- 26 acres of a 56 acre site have been completed except for planting of trees and shrubs; remainder to be completed at later date.

Work completed to date (1947) includes clearing and grubbing, rough grading construction of 1 1/2 miles of driveways, installation of sprinkling system, fine grading, and planting of grass.

Project under construction approximately 18 months.

Acquisition of property completed in 1945 at costs of about $60,000.

- Topo is flat; soil sandy with lime rock at 1 - 1/4 ft. below surface.

Local law requires gravestones to be 5' deep, ...1-4 ft. of rock must be removed in opening grave.

Elevation approximate 10 ft. above sea level.

- Cemetery designed for minimum maintenance.

Only flat bronze markers permitted (eliminates some trimming)

All interments to be in concrete vaults or liners (eliminates grave settling).

Plantings arranged to permit use of gang mowers.

Sprinkling system covers entire area.

- Ordinance provides that minimum of $1.50/sq. ft. be set aside in trust fund for each square foot of lot area sold. When completely sold, trust fund will have approximately $2 million principal, whose interest will maintain cemetery.

- Most of these unit prices are fairly low since much of the work was done by city departments, rather than by private contract.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Unit</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clearing and grubbing, complete 56 acres</td>
<td>acre</td>
<td>$139.00</td>
</tr>
<tr>
<td>a. Grubbing and piling only, by contract,</td>
<td>per acre</td>
<td>75.00</td>
</tr>
<tr>
<td>b. Disposal by City Force Account,</td>
<td>per acre</td>
<td>64.00</td>
</tr>
<tr>
<td>2. 8 cu. yds. Scraper and tractor with operator - 100 hours.</td>
<td>hour</td>
<td>12.00</td>
</tr>
<tr>
<td>Rough Grading - 30 acres, per acre</td>
<td>$40.00</td>
<td></td>
</tr>
<tr>
<td>3. Driveways complete, 18 ft. width, 20,000 sq. yards (10&quot; lime rock base rolled, water- bonded, cured, and primed with 0.2 gal. oil/sq. yd. Finish after several days with 0.45 gal. semi-solid oil per sq. yd., with 0.55 cu. ft. of 3/8&quot; slag per sq. yd. applied immediately afterward.)</td>
<td>sq.yd.</td>
<td>0.80</td>
</tr>
</tbody>
</table>
a. Subgrading - 20,000 sq. yds. @0.15
b. Lime rock laid - 6,000 sq. yds. @0.26
   (1) Blasting, per cu. yd., 0.37
   (2) Loading and hauling, per cu. yd., 0.50
c. Finishing complete
   (1) Loading and water-bonding - 20,000 sq. yd.
      (contract), per sq. yd., 0.15
   (2) Priming, oil, and slag finish, per sq. yd.,
      0.24
4. Sprinkling system, complete - 26 acres
   a. Class 150 cast-iron pipe - material
      (1) 8" - 1225 ft. @1.75
      (2) 6" - 5540 ft. @1.50
      (3) 4" - 300 ft. @1.25
b. Installation of cast-iron pipe
   (1) 8" - 1225 ft. @0.46
   (2) 6" - 5540 ft. @0.43
   (3) 4" - 300 ft. @0.40
c. 2" Galvanized pipe - material & installation
   (1) 4500 ft. @0.27
   (2) Laying 4500 ft. @0.20
d. Well and pump
   (1) 12" well, 67' depth
      ft.  12.00
      (12" casing was set in rock at depth
      of 52', and an 8" hole was drilled
      from a depth of 52' to 67'. No strainer
or gravel pack was used.)

(2) 400-gal. Centrifugal pump  2100.00

(250' head complete with starter and
switches and 260' underground services)

5. Grading and Topsoil - 25 acres  
   acre  500.00
   
a. Topsoil, stock piled on area - 6,000 cu. yds.
piled  @0.50

b. Topsoil, in place - 4,000 cu. yds., delivered
   @0.75

   c. Spreading and fine grading - 25 acres
   @260.00

6. Planting in grass - 25 acres  
   acre  249.50
   
   (3" squares planted 12" o.c., by hand)

   a. Blue St. Augustine - 68,567 sq. ft.  @0.03

   b. Labor - 507 man days @8.25

   Cost of labor per yd., 0.033 1/3
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