A thesis submitted in partial fulfillment of the requirements for the degree of Master in Architecture at the Massachusetts Institute of Technology.

Submitted: 23 August, 1954

By: ____________________________
   George W. Smith

To: ____________________________
   Lawrence B. Anderson
   Head, Department of Architecture
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A PRIVATE BOYS' SCHOOL
39 Westgate  
Cambridge 39, Massachusetts  
23 August, 1954

Dean Pietro Belluschi  
School of Architecture and Planning  
Massachusetts Institute of Technology  
Cambridge 39, Massachusetts

Dear Dean Belluschi:

In partial fulfillment of the requirements for the degree of Master in Architecture, I herewith respectfully submit my thesis entitled "A Private Boys' School."

Sincerely yours,

George W. Smith
ABSTRACT

A PRIVATE BOYS' SCHOOL

George W. Smith

A thesis submitted in partial fulfillment of the requirements for the degree of Master in Architecture at the Massachusetts Institute of Technology.

The education of the nation's youth is a matter of great concern as our world demands constantly increasing specialization from each of us. This thesis touches upon a limited portion of our educational system, the Private Boys' School. These institutions are not vocal, nor are they a source of great controversy. They are a consistent force which seeks to maintain the standards of the classic college preparatory curriculum.

The Noble and Greenough School at Dedham, Massachusetts serves as the subject for this planning problem. The situation at Noble's is not unique. Almost all institutions of any longevity must make similar decisions. Currently, the student body is at a peak which puts a great strain upon the existing facilities. There are several courses of action open to the Noble's
administration which have been discussed by the alumni and faculty and which are presented briefly herein. These problems, continuous in nature, require the attention and advice of dedicated trustees and competent professional advisors.

Preparation of a general plan for the future and the design of certain building units which would be needed in the event of an increase in the student enrollment are included. Lack of an economic analysis other than that intuitively exercised by the designer makes these proposals somewhat less realistic than would be desired in actual practice. The plans advocated herein are promulgated primarily upon an examination of the esthetic and functional requirements of the school.
Acknowledgement is made to the following individuals and groups for their aid and criticism in the preparation of this thesis:

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My wife Jo, for her untiring help
and constant encouragement.
THE PRIVATE BOYS' SCHOOL EXAMINED
What is the function of the private boys' school within our educational framework? This appealed to me as an interesting question to be answered before I began to design such an institution. An architectural thesis is not the place for a full exposition on this topic, but I would like to briefly note some observations which I have made.

Private secondary schools for boys can be defined as those schools which are usually independent of the administrative body governing public schools, and which require a payment for tuition, room, and board directly to the school. By secondary schools we mean those which teach boys in the grades seven to twelve inclusive. The background of these schools is interesting and it is found that they have been initiated for several reasons.

In the New England area one is aware of the large number of schools which are under the supervision of some religious group. This is true in other regions of the United States as well.¹ Today, many parents choose this form of education for their children. The child's religious training is much more effectively assured than is possible in the secular public schools where the constitutional requirement of separation of church and state is observed.

Many fine non-sectarian schools exist whose attendance is assured for other reasons. Many of these schools follow the tradition of the religious schools and most make some mention of their aim to foster the development of a Christian character. In these schools, these

¹Cole, R.D., Private Secondary Education for Boys in the United States pp. 6-10
aims are likely to be expressed through the practice of having Sunday chapel speakers of various faiths.

The practice of holding small classes (usually no larger than fifteen students), and the opportunity for the extremely close supervision and counseling of each student, enables boys in many of the private schools to receive thorough training and guidance not attainable in public schools today.

The caliber of the instructors in the private schools is high. These men can be chosen by the administration with great freedom and with recognition of their achievements in their chosen fields. Little emphasis is placed upon the number of education credits studied during college days (a feature of the public school teacher in this day of progressive education). The rigors of the private boarding school master are greater than those of his public school colleague because of the never-ending nature of his work. He is not free when the afternoon session has been completed but is frequently called on to supervise some activity, athletic or otherwise. His duties as housemaster are always present. All this in addition to the usual counseling, lesson preparation, paper correcting, and other chores completes the picture of the harried but happy master. The monetary rewards for his services are modest when compared to those which a man of his talents could command in industry. These factors tend to restrict the master's role to those who have a genuine desire to teach.

The private school fills a function as an experimenter in progressive educational ideas as well as being the
The progressive movement is now fairly well established in our public schools; this had its beginning at the Walden School, a private school in New York City, forty years ago.

Parents send their sons to a private school for other reasons, less virtuous than those previously mentioned. The desire for social prestige cannot be overlooked. Dad can hardly be censured for wanting his son to attend his old school.

The battle of the merits of public vs. private school education in the United States has been waged long and the results are inconclusive. I believe that private secondary schools do have a useful function. It is an advantage that we live in a nation where the choice is available to those parents who are dissatisfied with the public schools in their communities and who can afford to send their children to a school which offers instruction in keeping with their standards.

I attempted to visit as many private boys' schools in the Boston area as my time allowed during the spring of 1954. I had two main purposes in mind: one, to familiarize myself with the general architectural character and the relation of elements in the school plants; the other, to locate a "client", a school which actually had an interesting planning problem, and which could be articulate about its needs. These visits provided me with a fine opportunity to discuss private school problems with the headmasters. I had prepared a list of topics and questions, however, I did not
follow these too closely but was content to let the conversation lead where it would.

With the aid of Mr. David Dudley of the admissions office at M.I.T., I drew up a list of private boys' schools in this area which might offer me the best opportunity to satisfy my requirements. I wrote to twelve schools, informed them of my thesis project, and asked permission to visit their campuses. All extended an invitation to me. I was able to visit six of these in the time available, and also one additional school, the Noble and Greenough School in Dedham, Mass., which I later added to the list.

It is difficult to make a concise appraisal of my impressions. The natural tendency is to note the strong features, good or bad, of each school in turn. I do not believe that I am capable of making a thorough evaluation after such a cursory inspection, however the following points shed an interesting light on the situation.

New private boys' schools are not being formed, nor are many schools planning to increase their student body. This seems to be a paradox in this era of rapid population increase and the accompanying public school building boom. Some schools have made additions to their plants but seldom is this building intended to serve a greater enrollment. It is usually erected to replace aging facilities or to provide some new element for the existing student body.

There are reasons for the phenomenon which are recognizable. First, the influence of the headmaster is not adequately manifested upon each boy when the school
becomes greater than approximately two hundred students. This figure will vary somewhat with the school in question, but the tenet is valid. If the administration should decide to alter the school's character by taking on a greater enrollment, other obstacles must be overcome. The second factor is a financial limitation. The funds required for any sort of building drive, which must precede an increase in enrollment, are not easily raised. Perhaps this is a mark of our times. Perhaps those wealthy individuals who previously bequeathed an entire building or an entire campus are to be found no longer. At any rate, fund drives now are met by the alumni, by donations of many individuals, which is surely a more democratic method and, I hope, as successful. If the school should "grow", this fact would discourage many contributors who would view the venture as extravagant and ambitious. Obviously, this would also act as a deterrent to expansion.

Most of the schools are endowed. They are not of the proprietorship type, so there is little financial gain to be made by building a bigger and better school plant. The fees for tuition, board, and other services provided are usually barely enough to meet the expenses of masters' salaries, operating expenses, and other outlays. To most administrators and trustees, increasing the student body would cause an additional bag of headaches with few compensating gains.

In conflict with this attempt to maintain their present size, is the tremendous demand made upon the better schools by parents who wish to enter their sons.
It is difficult for the headmaster and other responsible parties to turn down intelligent boys who would be a credit to the school.

Most schools are conscious of their social responsibility and a few are reacting to it. The Noble and Greenough School, for which I developed a plan of architectural growth, is such a school.
THE NOBLE AND GREENOUGH SCHOOL,
A TIME FOR DECISION
"The Noble and Greenough School was founded in 1866 by Mr. G.W.C. Noble as a private day school in Boston. Later Mr. J.J. Greenough became associated with Mr. Noble and the school's name was changed to the Noble and Greenough School. In 1913, as a result of the interest of its alumni, the school was incorporated as an educational institution in the Commonwealth of Massachusetts. Four years later, Volkman School, another of Boston's private schools, combined with Noble and Greenough. In 1922, the school moved from Boston to Dedham and the boarding department was added."

In 1953, its eighty-eighth year, the school is a non-sectarian boarding and country day school for boys from the Seventh Grade (Class VI) to the Twelfth Grade (Class I).

Noble's school once more is at a turning point. The school's enrollment has greatly increased in recent years. In the 1930's the school's student body was between 110 and 135. During World War II the number of students fell to 82, but since 1945 the school enrollment has steadily increased to 165. The present school facilities are overtaxed, so that it has become apparent to the faculty and trustees that this is the time to examine all courses of action before haphazardly undertaking bits and pieces of building. Some overall plan for growth should be developed.

Shall the school increase its size? The time has come to consider this question. In view of the additions which must be made even if the student body remains at 165, and the cost which this would incur, helps make a strong case for enlargement. Noble's is very

*Material in this section was taken from the preliminary draft of the Report of the Planning Committee of the Noble and Greenough School
definitely under pressure to enroll more students. The school functions as a day school for a large number of the communities in the southwestern part of the metropolitan Boston area. It is characteristic of many families in that area to send their sons to public elementary and junior-high schools, then to enter them at Noble's for four years of pre-college schooling. Noble's serves primarily as a prep school for Harvard, 40% of the graduating class normally entering that university. Dartmouth, Amherst, Princeton, Williams, and Yale claim another 30% while the remaining 30% attend other colleges and universities.

That the character of the school would change, is the fear which many at Noble's hold in view of the proposed changes. Noble's has been characterized as a school where a friendly and informal personal relationship exists between the students and faculty. It is small and intimate.

"Here the teacher knows at least something of every boy, certainly knows him well enough to call him by name, to know what class he is in, and to have a pretty good idea of what sort of work he is doing."

There is no certainty that the school will have a different character with the addition of seventy boys. Before the student body increased to its present size, there were those at Noble's who felt that added enrollment would change the friendly school. But, the present opinion is that the character did not change appreciably.

Further growth of the school would jeopardize the boarding department. Noble's is not a boarding school. Its character is largely that of a day school. At the
present time there are forty-one boarders, representing 25% of the student body. These students are not boarders in the usual sense; most of them return to their parents homes over the weekends. At Noble's this is considered desirable; the boys develop a close school contact while enjoying the companionship of their families on weekends. Noble's is not the school which parents select if they want to board their boy. Of the first fifty-five applicants for admission to the school in the Fall of 1954, only three were boarders. On this basis, it seems that the school is not likely to increase its boarding department.

Financially, the school is apt to suffer if the boarding facilities are not full, since a modest profit, used to help defray other expenses, is realized from that department. A promotional campaign would probably be necessary to fill any additional boarding quarters. In the event of increased student enrollment, the school desires to maintain the existing proportion of boarding to day students. It is the opinion of the administration that a higher proportion of boarding students than now exists would endanger the present character of the school. It would have the effect of making the day students feel like outsiders, who attended only for their classes and then returned home to leave the boarders as the heirs to the main current of school life.

Size of the Student Body
The teaching sections at Noble's now contain about fifteen students each. The faculty believes that this
size is the most satisfactory in view of the teaching practices used at the school. With this size as a constant, it is possible to theorize what the effect would be upon the school if any of a number of courses of action were followed. These proposals are judged as they affect the requirements for additional teachers and building units.

The school authorities feel that the ideal class distribution for the present time is as follows:

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In courses taken by all students, it follows that there will be two teaching sections in each of the upper five classes and one in the sixth class. Only in the fifth class could any students be added, but this would be a hardship because many students usually enter the school in the fourth class after completing their earlier education in the public schools. The problem of expansion then could be reconciled by adding one more teaching section in classes IV, III, II, and I, and by increasing class V to two full sections of sixteen each. This increase would be taken on over a number of years, upon the building of sufficient facilities. The total number of students enrolled under this plan would be between 235 and 240. This was recommended by the school authorities as a superior plan to that of enrolling just a few boys. The latter would be unsatisfactory because (1) teaching sections would be too large by Noble's standards, or (2) teaching sections would be too small to be financially sound.

There are other arguments for both increasing and retaining the size of the school. Some considerations
in favor of maintaining the school at its present size follow:

1. As has previously been discussed, some fear that the character of the school, together with some of its fundamental principles, might be endangered.

2. Increase in the size of the school means increased administrative facilities and personnel. The school's administrative organization is similar to its organization in the 1930's, except for the creation of the post of business manager.

3. Another argument in favor of keeping the present size is the high cost of expansion of the physical plant necessary to accommodate the additional seventy boys. (I shall review the facilities which might be needed if any one of a number of courses of action were followed in detail, in a later portion of this thesis.)

There is a case for enlarging the school. The strongest factor is the overwhelming demand for independent schooling. Noble's is advantageously situated in an area of large suburban population which is financially able to provide private schooling for its children. (See Plate I) The number of applicants increases every year. This trend is likely to continue in view of the ever increasing population. Noble's awareness of this demand, and the willingness of its faculty, trustees, and friends to act in response to this social need is admirable.

"Last year we turned away over seventy bonafide applicants, many of whom we would have liked to have had in the school, as well as numerous other requests. It is hard to say no to a good applicant. Have we a responsibility to the community, if we find funds to increase our plant, to take more boys? Or should we say, 'It's time some other schools got started.'"
Noble's administration points out that starting a school today seems like an insuperable task from the standpoint of costs. At Noble's the plant would cost $1,200,000 if it was to be duplicated. Some of the plant has been built from surplus income, but probably 95% has been given to the school. Most of these donations were made by Noble's graduates.

Change in the Type of School
There are possibilities other than expansion which would allow the school to graduate more boys each year. The alternatives would be to drop the sixth or the fifth and sixth classes. Then more boys could be served without increasing the total student body.

The present ratio of 10 boys to every master is considered good for a private school. The faculty at Noble's, at present, has sixteen regular members, including three who do not have full-time teaching assignments because of administrative duties. Two part-time instructors teach the music and art courses. How the size and composition of the faculty will be affected by a proposed course of action is an important consideration.

Plate II shows graphically what alternatives are possible if the school is kept at its present size. (A) shows the existing breakdown. Of course, this is not an exact pattern for all subjects, but the chart can be used to show possible alternatives.

(B) shows a scheme which would require two additional teaching sections. Each section would take five courses, thus seating ten extra classes per day, which would be a full load for at least two more faculty members.
A school of four classes works out to better advantage. In (C) the breakdown shows that only eleven sections, of fifteen students each, are required. This has the disadvantage of admitting many boys to the third class. At Noble's, it has been found that it is sometimes difficult to prepare a boy for college when he does not enter until his sophomore year, particularly if he is from a public school.

Another arrangement is shown in (D), which creates another section requiring an additional faculty member. Even though the student body remains at 165, an additional section, in excess of the present eleven, would require more classrooms and laboratory space.

If Noble's changes its scheme to include only four or five years, a plan under which many successful preparatory schools are operating, from twelve to fifteen more boys could be graduated each year. A fifty per cent increase in the number graduated would then be attained. On the other hand, many boys might not want to find another school for one year at the end of the sixth or seventh grade before coming to Noble's. In this way, Noble's position might be jeopardized. As a possible answer to this problem, the administration has considered erecting a lower school on some presently unused portion of the property. This is one of the less seriously considered alternatives.

The preceding discussion has reviewed various plans of action which Noble's may follow. The administration is logically concerned with obtaining the greatest return for the least expense; in this case, graduating more boys each year with a minimum increase in outlay.
for additions to the school plant and additional instructors. Whichever plan best achieves this goal is the one which the school will probably follow. The decision which deals with the future development of the school is based on a number of factors. Those which have been covered can be considered as the variable elements. Site and existing buildings are the quantities which remain to be considered. These are more or less fixed.
THE SITE AND EXISTING BUILDINGS
The school property is located in the town of Dedham, Massachusetts, on land of varied character. The Charles River meanders on a course which roughly defines the property line on the South and West. The playing fields are adjacent to the river. This is the only reasonably level land on the property. It is alluvial in nature. Rising abruptly on the northern and eastern sides of the plain in the hilly portion of the plot. On this higher land to the North the major teaching units of the school are located.

The administration and advisors of Noble's were greatly limited in placing the existing buildings. The main house was constructed, not to satisfy the needs of a private school, but those of a private individual. It was the logical result that the buildings needed by the school were located in close proximity to this first building. Could some other location for the classroom building have been found? It seems unlikely that any more readily adaptable spot could have been found that would have been convenient to the "Castle". A site on the lower plain might have been considered, but this would have proven undesirable for reasons which the earlier planners probably had in mind, i.e. this space would be needed for the playing fields. Placing a building at the foot of the "Castle" would probably have destroyed its effect when viewed from the "Plain". The location selected for the "Schoolhouse" is certainly easily accessible to the many day students. The lower site would not have been so successful in this respect.

While a hasty glance at a map of the property might indicate an abundance of space which seems to be
available, such is not the case. The area to the east of the present complex is practically all wooded. Steep climbs alternate with marshy areas. This portion is not used by the school mainly because it is not needed. If some high return use could be found for this part of the site, it possibly would be worthwhile to drain the marshes or fill them and further prepare the land for building. A similar situation exists to the northwest. Practically all of the site which is not given over to the playing fields is wooded. These woods, and the frequent outcroppings of rock, create a feeling of the primeval forest when the buildings have been lost to view.

The Charles River graces this site as it does other portions of the metropolitan Boston area. The school's boating house is a center of great activity. The nearby skating house also receives heavy seasonal use. The beauties of the river are a natural focus for the outward view from the campus; however, the steady fair weather traffic on the Charles and the frequent trespassers who approach the school property create a minor problem which must be kept in mind when locating new structures.

Noble's is served by a network of roads. The main entrance to the property is on the northern boundary. This paved roadway leads past the west side of the "Schoolhouse" to the rear of the "Castle". A branch leads to the "Frat" house, a residence for married masters and ten students. A right turn at the fork beside the "Schoolhouse" runs down from the higher land toward the Charles River, whose bank it follows to the
gymnasium, past the gym and garage, then back toward the "Castle" front. A right turn here leads over the unused land to the east of the present buildings and out to the eastern entrance of the school.

At the present time, the school uses water from the Dedham town system, but since no sewage lines are present to a town sewage treatment plant, the school must provide its own waste disposal facilities.

The "Castle"

Planted firmly on the high ground above the "Plain" is the main house or "Castle". From the playing fields it looms as the dominant visual feature. This is not the case from the high portion however, because of the small hillocks and dense trees which intervene.

Henry Hobson Richardson was the designer. The mansion, purportedly a replica of a manor house in Duxbury, England, was built in 1888. This building is a museum piece containing many interesting features. At the northern side of the house is the main staircase which spirals upward for three floors in an apparently gravity defying exhibition. The lower floors abound with hidden trap doors, sliding panels, and dark subterranean passages leading to hidden rooms.

The building is in good condition and will not be discarded in the near future. Some alterations and additions have been made to it since its original construction. A wing was added which contains new kitchen facilities and living quarters for school service personnel. A heating plant was installed to service this addition. The architect called for a tile roof on the
original building; this has been replaced. Facilities contained within the "Castle" comprise the bulk of those not directly involved with teaching, studying, or athletic activities.

(1) Student lodging
These rooms are located on the upper floors. Some of them are very spacious while others are merely cubicles separated by partial partitions in the manner of the classic "dormitory". Thirty students are housed here.

(2) Masters' lodging
Sufficient masters' quarters are included to provide satisfactory supervision in the student quarters.

(3) Headmaster's apartment
Located in the spacious but dark eastern portion of the "Castle". It is considered inadequate for the Headmaster's needs.

(4) Library
Like most of the other rooms this one is very dimly lighted by today's standards.

(5) Dining Room
It is located on the main floor level adjacent to the Library. The view to the south takes in the "Plain." As it is overcrowded now, it would be inadequate in the event of an increase in student enrollment.

(6) Kitchen
It has been remodeled recently and is considered to be adequate.

(7) Infirmary

(8) Help living quarters
The "Schoolhouse"

The "Schoolhouse" and administration building contains all of the teaching and studying facilities, exclusive of the library which is located in the "Castle". It is a simple red brick building fronting upon the service drive to the "Castle" and "Frat". In spite of its high position, it exists as a building apart from the rest of the school property. A view of the Charles River, the "Castle", or the "Plain" is impossible because of the dense woods on all sides. The classroom portion of this building was constructed when the Noble and Greenough School moved to Dedham. The administrative office portion has been completed recently.

(1) Main study hall
This room seats 160 students.

(2) Classrooms
Each of the ten classrooms is approximately 18' x 24'. The usual blackboard and storage facilities are included, although the storage space is not adequate. Except for the rooms at the corners of the building, each has two large double hung windows which provide natural lighting.

(3) Laboratory-classroom
It is located in the partial basement below the study hall. It is of insufficient size to properly handle the many science classes currently being taught at Noble's. From the level of the classrooms and study hall it can be reached only by way of an exterior stair from the study hall.

(4) School office
This space is too restricted for the functions
which use it.

(5) Headmaster's office
(6) Art and music rooms
   They are located on the second floor above the administrative offices.

(7) Faculty Room
(8) Reference library

Assistant Headmaster's house
It is a pleasant brick structure fronting onto a pleasant grassy slope to the east of the "Castle".

Fraternity House
It is located at the northwest corner of the "Castle". Facilities are contained for ten students, a married master, and his family. This building is undistinguished architecturally.

Gymnasium
It is located on the south side of the playing fields. Although inadequate in space allowances for today's needs, it is generally in good condition.

(1) Basketball court
(2) Wrestling room
(3) Apparatus room
(4) Shower and locker facilities
(5) Caretaker's quarters

Baseball cage
It is unheated with a gravel floor. It is located behind the gymnasium and is infrequently used.

Boathouse
Skating house
It is a light frame portable structure; used in winter as named.

Garage
This building now serves as maintenance headquarters.

Groundsman's house
THE PROBLEM
In cooperation with the administration at Noble's, the building needs of the school have been determined. Those will follow, but first, I want to note some impressions and thoughts which I have had regarding the general development of the site.

Noble's is situated on a naturally beautiful site. Unfortunately for the school, I do not think that its inherent qualities have been fully realized. My first visit to the school was made this Spring, by car. I arrived at the eastern entrance, then proceeded along the road, through the marshy and presently undeveloped portion of the property, to the "Castle". When viewed from its base, the "Castle" embraces all the qualities generally attributed to such structures. It is windowless on its lowest floor and only one entrance presents itself. Unfortunately, I had arrived at the front of the building while the school life usually circulates through the rear entrance, one floor higher. I inquired of some men who were attending to the grounds nearby, where the administration office was located. Then I realized that I had used the wrong entrance to the school, so I drove my car down from the "Castle" front to the west drive which leads to the "Schoolhouse". I do not suppose that many have the difficulty which I encountered, and even if they do, a few well placed signs could probably alleviate the problem. From the low front of the "Castle", I could not see the "Schoolhouse" or the other buildings behind the main structure, nor were they apparent from any location on the "Plain". I became aware at this time that the school campus, as a whole, is non-existent. I do not believe that the entire plant should be revealed at a glance from any
point on the campus; but some vista, at least some sus-
picion, of that which lies beyond the immediate scene
should be imparted. This could be done in rather sim-
ple ways with walks and cleared areas in the woods.

The "Plain" is very lovely. The drives which exist
are sufficient to provide circulation to the gymnasium
and other structures on the southern side of the play-
ing fields. More parking space is needed, however,
during the regular school year, and for the day camp
which is in operation during the summer months. It
seems a shame to encroach on the open area at all, but
additional gym space is needed and the logical loca-
tion is in close proximity to the recently renovated
and expanded shower facilities in the existing gym-

The hilltop portion of the campus needs attention to
achieve a balance and integration with the natural
splendor of the "Plain". Here, behind the "Castle",
the educational facilities are located; these are, at
present, housed in a single enclosure, the school and
administration building. This is known at Noble's as
the "Schoolhouse". It is a comparatively new building
which is due to see many more years of service. Fu-
ture teaching units will probably be in close proxi-
mity to this building, if not physically attached.
The "Schoolhouse" is not unpleasant in its present po-

The main entrance is on the north side of the school
campus so that all automobiles, whose occupants are enroute to the administrative section, must drive past the front of the school. This roadway proved to be the bane of most of my early studies. The present position of the "Schoolhouse" is a logical one, it was probably the only portion of the high ground which was fairly flat and free from outcroppings of rock. The roadway follows the natural path from the entrance, past the "Schoolhouse", and on to the "Frat" and the "Castle".

However natural the solution was at its conception, I do not believe that sufficient thought was given to the future development of the school. Even now, when the school is at another turning point, a time when a decision for the preparation of an overall plan should be made, the school administration is considering adding science rooms to the rear of the existing school building. This addition would further negate the possibilities for future flowering of an integrated campus.

The Noble and Greenough School is faced with a problem which requires long range planning. Even when master plans are conceived, it is not uncommon for them to be thrown aside, due to changing times and administrative desires, but a good plan is better than no plan at all. The "hand-to-mouth" planning is natural and easy, sometimes leading to quaint and interesting campuses if handled sensibly, but it does not appear that this would be likely to happen at Noble's. I cannot see why the Noble and Greenough School should subscribe to piecemeal planning when it is endowed with such natural beauty just waiting to be pruned and pushed into shape.
Building Needs

At this date, the administration has not decided to increase the enrollment. It is interesting to compare the building needs of today with those which would be required should an additional 70 boys be enrolled.

In the event no enrollment increase is made:

1. Science facilities

Additional or entirely new laboratory space is urgently needed. A single room now serves as the laboratory and lecture space for instruction in biology, chemistry, and physics. General science classes are scheduled whenever a spare hour can be found. This tight scheduling for both classroom area and laboratory experiment space makes it extremely difficult for the instructors to prepare their equipment for demonstration lectures, not to mention the inconvenience to the students. Interest in the science courses has greatly increased at Noble's in recent years.

2. Expanded Indoor Athletic Facilities

A new gymnasium has second priority at Noble's. The existing basketball court is smaller than regulation size. Spectator space at the side is practically nonexistent. It is contemplated that the present court will be taken over as a wrestling room with new facilities serving the basketball enthusiasts. The school does not have an interior space used solely as an auditorium. The present gymnasium has been used for those large functions such as graduation exercises. The gymnasium is not equipped with a stage house so that a portable stage has been erected. If a new structure is constructed the school administration suggests that
it have a stage house rather than a portable platform such as is now used.

3. Additional Study Hall Facilities
The existing hall in the "Schoolhouse" is sufficiently large for 160 desks. This is five less than the present student body. Five of the boys from the first form have desks outside of this main hall.

4. Additional Living Units for Students
Presently, student living space exists in the Main House and in the "Frat". Some additional space is needed however. The school administration has considered adding a wing to the residence of Mr. Flood, a master, in order to satisfy this need.

5. Additional Married Master's Quarters
These can always be used. It is a continuing problem at Noble's as at other private schools to find living space for the instructors. It is the policy of the school to house the masters on the campus when space is available, otherwise, an attempt is made to find facilities for them outside.

6. Headmaster's House as a Separate Unit

7. Additional Dining Hall Facilities
A new dining hall is not needed, however, some means must be found to take care of the overflow. It has been suggested that perhaps there would be 30 or so of the day students who would like to carry their own lunches to school. Some space other than the dining room would then be needed for these students.

In the event that the enrollment is increased to 230 students, the preceding facilities will be needed in
greater quantity in addition to:

1. **Classrooms**
   The number needed will be roughly proportional to the added number of student teaching sections. In this case, the required number would be four additional rooms.

2. **Study Hall**

3. **Additional Administrative Office Space**
   The additional facilities needed to handle the 70 extra students at Noble's certainly do not appear to be much greater than those actually needed for the present student body. Although the administration and faculty of Noble's have not decided to undertake an increase in the student body, I believe that it is to the advantage of the school to build the largest package that could conceivably be needed in the immediate future. The school must build to provide proper facilities for the present number of students, therefore it appears that a wise course would be to add the small additional increment needed to provide for a student body of 230 persons.

The problem then, is to design a campus master plan which not only satisfies the various functional needs of the individual building units, but also creates an integrated whole where the young men of Noble's may appreciate the graciousness of man's work beside the all-powerful forces of nature.
Further discussion of the problem and solutions

It is evident that the more clairvoyant our vision, the more successful will be the planning undertaken. It appears that it is not too difficult to forecast the future for Noble's. The Noble's administration, faculty and friends are an active group who will endeavor to keep the school as an operating institution of comparable size and character to that of today. Perhaps an anticipated size of 230 students will be the maximum attained by the school, but in these rapidly changing times, it would be foolhardy to plan for this number of students and no more.

All factors must be considered. A method for continuing control of the school's growth must be found which will be adaptable to future changes in school policies and educational philosophies. Any plan for growth must not be ironclad but it must be bent and reworked to integrate the present thoughts and conditions with those of the past and future.

From an economic standpoint a general plan is essential. It will help eliminate an unnecessary expenditure of time and money through the early abandonment of older structures before they have earned a fair return on the money invested in them. Noble's has not been faced with this problem yet. It is a young school whose structures are due to see many more years of useful service.

Certainly the requirements of the General Plan cannot be made unchangeable, nor will it be infallible, but it will serve as the most accurate forecast available. It will have the added advantage of requiring studied
consideration by the school when any building developments are contemplated. The administration will get onto the habit of thoroughly considering each move in the light and future plans.

In order to develop a plan for an anticipated increase to 230 students and for the still more distant future, it is desirable to list under general headings the functional groups which comprise the school plant: (1) teaching and studying, (2) lodging, boarding, and the social activities connected with these functions - these can be broken into two groups, student and faculty, (3) athletic activities, and (4) services ancillary to the main school functions. Presently, the Noble's campus does generally follow this subdivision in the grouping of buildings. Of course, this might very well be a natural result rather than a designed one, as the functions are grouped one per building, with the exception of the lodging, boarding, and social activities which are mixed with the ancillary services in the "Castle".

Physically, the Noble's plot is divided into two areas, the "Plain" which will be referred to as the Lower Campus, and the "Schoolhouse" area which we shall call the Upper Campus. These designations will aid in the discussion which follows.
THE UPPER CAMPUS
Teaching and Studying Activities

The "Schoolhouse, which is in good condition and will be in use for many more years, is the center toward which any additional teaching units must be directed. This location atop the hilly portion of the Noble's plot greatly narrows the focus of our attention concerning a new teaching unit location. There are many reasons which make a close tie with the "Schoolhouse" desirable. (1) It is the custom to have only two minute passing periods between classes. (2) The desire for closed or covered connections between teaching units. (3) The need to create a feeling of unity in the wildness of the wood.

The "Schoolhouse faces toward the west onto the service roadway which runs from the school entrance to the "Castle". Little more clearing of the trees on that side of the "Schoolhouse" has been undertaken than absolutely necessary for the roadway and parking area. This area is fairly level and with comparatively few rock projections above the surface of the ground. The area to the east of the "Schoolhouse" falls off very rapidly to a brackish pond and the tennis courts which lie beyond.

While other factors may change, the size of the teaching unit will remain stable. This fact insures full use being made of the classrooms with no alterations needed for larger sections. The size of the various forms, the educational organization, the curriculum, and the movement of students from classroom to classroom may change, but the size of the section taught by a master will remain constant.
Therefore it seems advisable that these classrooms should be so interconnected in such a manner that would make any new division or allocation easily possible.

The logical area for development then is the hilltop area adjacent to the existing "Schoolhouse". Here we have a relatively flat area. Additional facilities are required on the "Plain" as well, but in this relatively developed area the problem is more localized and architectural. On the "Plain" it is desirable to place the addition so that it works well, but on the Upper Campus the larger development must be kept in mind.
New Schoolhouse

Requirements

(1) Four classrooms
Each to be approximately 500 sq. ft. in area, to seat a maximum number of 20 students. Storage and display space is needed in addition to usual array of chalkboards and tackboards. Lighting from one side is considered sufficient for room depth of 20 feet.

(2) Science facilities
The existing laboratory is considered inadequate and would be wisely given over to some other use. Therefore, facilities are needed for instruction in physics, chemistry, biology, and occasional general science classes. In conjunction with these classrooms, instructor's preparation and storage space is required. In all cases the size of the sections will be from 15 to 20 students.

(3) Study hall
Containing facilities for at least 70 students. Usually a large room with desks for students and provisions for the master in charge. This space is sometimes used as a classroom or a small auditorium.

These comprise the principle facilities which are needed for teaching. Of course, other ancillary services and spaces are needed and must be provided for.

It is conceivable that these various additions could have been made by tying them to the existing "Schoolhouse" at a kindred location. For example, the science
facilities could have been created by building out from the existing science laboratory which is on the east side of the "Schoolhouse" in the basement below the study hall. This does not seem to be a desirable move in view of the aim to develop a hilltop campus. Likewise, the classrooms could possibly be attached as an extension of the present building on the north side. However, it seems much more logical to combine these various needs into one space. It is certainly more economically sound. When planning this single building containing all of the teaching facilities, it was desirable to keep the classrooms on the east and west sides for the best natural lighting. As a depth of only twenty feet was used, lighting from one side was considered sufficient.

Several arrangements are possible in the science department. First, it is conceivable that the laboratory spaces for chemistry and physics could be ranged on either side of a common lecture hall. However, this arrangement might cause scheduling difficulty. In this case, I subscribed to the current thought which advocates combination classroom-laboratory areas. This arrangement worked out very nicely with the preparation-storage room located between the combination classroom-lab areas.

In view of the different service and equipment needs of the physics lab and the chemistry lab, it is wise to place them in separate rooms. While performing a chemistry experiment a standing position is desirable. Biology and physics are laboratory courses in which the student may usually sit while performing an experiment.
In the biology and physics courses it is possible to have the students ranged at a long desk since very little in the way of mutual use fixtures (sink, reagent shelf, hood, etc.) such as are required in chemistry, are needed. In developing the scheme for the "Schoolhouse", it proved advantageous to have the biology-physics room on the northwest corner so that two walls of the room would be glazed and thus usable for the long, window-side, type of lab table. The chemistry room will have a 4' x 6' type of standard table, four of which will be needed. These tables contain a sink, and a center shelf for reagents over the sink. The hoods are located on the interior wall of the chemistry room.

Both of these combination classroom-laboratory rooms would be fitted with a large instructor's demonstration desk and blackboard space which is visible from all of the work areas as well as the lecture area for which it is mainly intended. Display cases and room storage would also be provided.

Study Hall
This space has few special qualifications. Space allowances for each student are approximately the same as in the classrooms. This room must be well lighted. A desk for the master in charge should be included at a point from which the room can be kept in constant surveillance. In one of the schools I visited the proctor sat on a high dais, but this is not necessary at Noble's. Chalkboards should be placed convenient to the proctor.

The space provided for the study hall faces to the
south where a wide overhang is needed to afford protection from the sun during the winter months. It is fortuitous that this protected area is created on the south side of the new schoolhouse where it faces a gently rising slope. What could be more opportune than to have this shelf on the south of the building, to be used as a stage during the pleasant days of the Fall and Spring? It would be an ideal place to hold the annual graduation exercises. Where better could one appreciate a concert by the young musicians of Noble's?

The new teaching facilities should be connected to the "Schoolhouse" simply with an overhead protection, rather than an all weather enclosed passageway. The new structure will be located at least fifty feet from the "Schoolhouse" to insure sufficient natural lighting, and to satisfy acoustical isolation provisions for the classrooms. A canopy will define the northern entrance to the hilltop campus. This canopy will cover the connecting student walkway between the old and new "Schoolhouse". The entrance at the northern end of the "Schoolhouse" is wide enough to handle this increased student traffic without alterations. On the north side of the canopy a small plaza will be created leading to the crosswalk. On it will be placed benches, sculpture, or statuary of the school "heroes". This will normally be the student approach from the main service road and student parking area.

Vehicular Circulation
The vehicular circulation problem in the area adjacent to the "Schoolhouse" is not serious although it must be considered. All of the day students at Nobles arrive
by private automobile. Usually, the older boys pool cars, with one of the students driving, while the younger boys have transportation provided by their parents. At present, insufficient parking space exists for this purpose. In the future, this parking space and sufficient turn-around space must be created. The administration forbids the student use of automobiles during the school day. Other provisions for the future include the relocation of the existing road from the west of the "Schoolhouse" to the east side. This will be the first step in developing the upper campus. Relocating this service road to the east will not be difficult. It is possible to follow a path without excessive gradients very closely from a point of departure on the existing road, to a point southeast of the "Schoolhouse". This relocation is necessary for a second reason. At present, the administrative offices of the school are located in the south portion of the "Schoolhouse". Unfortunately, this is a long walk from the parking area to the north. Therefore, I have chosen to create an administrative parking area adjacent to the headmaster's and business offices. Further, I believe that the relocation of the service road is desirable because it will force the development of the presently neglected area behind the schoolhouse.

At this point, we have the service road removed and the new teaching unit erected on the west of the "Schoolhouse". The woods will be cleared out of an area extending from the front of the "Schoolhouse" to a parallel line approximately 200 feet to the west. Those rock outcroppings which are on the western fringe
of the area will be allowed to remain, while others closer to the buildings will be cleared out.

Reservation for any future teaching units beyond the anticipated needs for 230 students will be made in the area to the north of the present "Schoolhouse".

Student Lodging, Boarding, and Social Activities
This is a "Castle" centered group of activities, as the bulk of the student living quarters are in that building. The dining room is also located in the "Castle"; a location which it will probably keep as long as the building is in use. The lodging units, therefore, must be in close proximity to the "Castle".

The western slope of the upper campus appears to be best adapted for student lodging units, although care is needed in placing them due to the frequent outcroppings of rock. These units can be ranged fairly high on the slope so that they will afford their occupants a view of the Charles River to the west. At this elevation, the walk to the "Castle" will be pleasant, along a fairly level path. The lodging units should be placed fairly close to the "Schoolhouse" without actually facing it. I think that it is desirable to keep these lodging units separated, somewhat in distance and especially in spirit, from the teaching center. The boys need to feel that they have made a break with the ordered arrangement of the teaching and study area. This lodging unit will be partially visible from the "Schoolhouse". The student entrance will be at the level of the upper campus, and it will define the western boundary of the open portion of the upper campus.
Lodging and Social Activities

Requirements:

(1) Lodging for twenty-eight boys of the upper forms.

(2) A social room which will be used at the start by thirty boys as a lunch room.

(3) Additional space for the usual bath and toilet facilities, for janitorial service, and a small amount for storage.

One may wonder why twenty-eight students were included in this one unit. From past experience at Noble's, this number has proven to be most easily managed by one master. The double room system employed is a compromise between the more desirable single room accommodations and the need to design an economical building. It did not prove feasible to design a single room system, where, if the overall lodging area was maintained, each room would be one half the size of the double room accommodations. They would have been seven by thirteen feet in size, which is both too small and too unpleasantly proportioned for habitation by growing boys. In a more elaborate layout, a system of two or three individual bedrooms opening onto a common study and social room would be possible.

From the start, in my planning, an attempt was made to have the masters' housing, for reasons of supervision, in close proximity to the student lodging and social area, yet separated as much as possible to give him and his family a certain amount of privacy. This has been attained to a certain extent, by opening the student rooms on either side of a
corridor to the outside, and simply using the downhill orientation as the principal apartment view. Initially, Noble's will require only one of these combination student lodging—masters' housing units. Future units could range northward on the same elevation as the first unit.

The social room, its adjunct facilities, and the storage and maintenance space will be situated below the living space. This arrangement should prove to be very effective in providing a convenient social area which, at the same time, is isolated from the quarters of any boy who wishes to study while other students are playing. This situation would probably not occur too frequently since regulations permitting the use of the social room only at designated times, would be adopted. The level on which the social room is located will be only partially closed so that a through passage will exist under the lodging floor, from one side to the other. In the future, when more units are added, this level can be developed as a promenade running along the slope between and through each unit, with the Charles River on view to the west. This whole western slope would be developed as the location for the student lodging. If the number of units increased to more than three, or if the present dining and common facilities in the "Castle" became obsolete, this slope would be the likely location for a new dining hall and commons room.

**Married Master's Housing**

Requirements:

Two master's apartments
It is conceived that these apartments will contain similar facilities, each consisting of three bedrooms, study, bath, living and dining area, play space for the master's children, and ample storage space.

The purpose of this housing is to bring supervisory personnel immediately adjacent to the student lodging. This brings into play a conflict of sorts. It is desirable to have the student portion face onto its own view, maintaining as much separation as possible between the living areas of these two units, but at the same time a close tie is necessary in order that the house master may exercise control in the dormitory.

These apartments are more spacious than might ordinarily be found. They are designed in view of the school's endeavors to induce competent masters to make a lifetime career at Noble's.

**Headmaster's Residence**

Requirements:

1. **Living space**
   - A living room, dining room, kitchen, study, four bedrooms, and bath, laundry, and storage facilities should be included.

2. **Entertainment space**
   - There will be an encroachment of these functions upon the living space, but this is not undesirable.

An ideal location exists for a new Headmaster's residence on the southeast slope of the small hillock directly east of the "Castle". The view from the house would encompass the lower campus.
The Services

Heating Plant
It has been standard practice at Noble's to include a separate heating source in every new structure. In view of the small number of buildings erected since the property was obtained for the school no other course could have been economically feasible. The "Schoolhouse" and the gymnasium are large units lying 1200 feet apart. Laying a line to them from a central heating plant in such topology would not be easy. If Noble's should decide to undertake the building program required by the enrollment of more students, an exhaustive analysis would possibly indicate the feasibility of undertaking the installation of a central heating plant. For the purposes of this study I have assumed that this installation would be made.

Grounds and Buildings
These functions will be relocated from their present space south of the gymnasium to a new site east of the upper campus. The Heating Plant and this unit will comprise the heavier service activities which will be located on the upper campus but sufficiently removed for visual separation.
Meeting of the Upper and Lower Campuses

These two areas are very different in character. From the upper area it is difficult to comprehend that the "Plain" exists. If the descent is being made by automobile, one is hardly aware of the separation, but when one is walking, a visual revelation of the pedestrian walk to the "Plain" is not so readily apparent. The boys have worn a path on a line that is approximately the shortest distance from the "Schoolhouse" to the gymnasium. This same route should be developed as a more strongly indicated pedestrian connection between the two portions of the Noble's campus. This link would be the first step in a visual integration. A great amount of the difficulty is caused by the "Castle", which sits firmly in the natural gap between two spurs on the south side of the high plateau; therefore, links through the woods created by roadways, pedestrian walks, or clearings must skirt to either side of the "Castle".
THE LOWER CAMPUS
Athletic Facilities
The structures at the southern end of the "Plain" are the only ones which have been allowed to encroach on this open area. They are well located to serve as a visual interest center from any point on the playing fields. The gymnasium has its front facade oriented to the playing fields and the "Castle". These structures create a feeling of enclosure within the "Plain".

In the makeup of life at Noble's, athletics, both intramural and interscholastic, play a big part. The common room is lined on many walls with footballs garnered in past victories. Daily participation in some form of athletics is considered a vital part of the school curriculum.

New Gymnasium

Requirements
(1) One regulation sized basketball court
(2) Two basketball practice courts.
(3) Seating accommodations for 300 persons
(4) A stage

The new gymnasium is expected by the administration to be of minimum cost, little more than a shell for the pursuance of athletics. No shower or locker facilities will be included within this new unit. These are available in the recently renovated installation within the old gymnasium. This makes it mandatory that the new structure shall be tied to the old with a completely enclosed connection. However, this is not an easy task because of the narrowness of the peninsula at this point and the desire to retain
the maximum amount of playing field acreage.

A logical location appeared to be at the northern side of the existing building where a close connection with both the existing basketball court and the shower facilities immediately below could have been most easily handled. However, a trip to the school belied the accuracy of the map which had been used. The scheme above would have required a cantilever of approximately thirty feet over the Charles River. Both the eastern and western sides of the gymnasium offer little opportunity for an interesting juxtaposition of masses and the spaces between.

The south side of the gymnasium is now the site of the garage which serves as the grounds and building maintenance shop and storage space. It must be relocated as previously discussed, as will part of the paved parking area. In spite of these disruptions this location for the additional gymnasium is most desirable. The long axis of the gymnasium will lie in a north-south direction. Major fenestration will open to the east toward the playing fields and to the west toward the boathouse and the river beyond.

While it is generally considered inadvisable to use the same space for filmed audio-visual presentations, theatricals, and sports exhibitions, such will be the case at Noble's for at least a few years. A public school auditorium is generally counted upon to serve the community for various functions and thereby, be more economically justifiable, whereas, at Noble's only school functions will take place in this space.
The administration does not anticipate contracting an auditorium as a separate entity at this time.
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THE "CASTLE"

THE "SCHOOLHOUSE"
THE "GYMNASTUM"
PLATE I

DAY STUDENT DISTRIBUTION BY COMMUNITY
THE NOBLE AND GREENOUGH SCHOOL

school year (1953-1954)
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EXCERPTS FROM THE SCHOOL CATALOGUE

Admission Requirements
Applications for admission should be filed at the School as early as possible during the year preceding entrance. Preference is given to boys entering the lower classes.

In accepting a boy, the School gives careful consideration to the report by his previous school not only on his academic record, but also on his character and future promise. To supplement this information the applicant is expected to take special examinations offered by the School. These consist of a scholastic aptitude test and examinations in such continuing subjects as English and mathematics. In the main, the standards approximate those established by the Secondary Education Board for comparable levels.

Entrance examinations are given in the Winter and Spring terms. The School recommends that, when possible, candidates take the Winter examinations. The dates of these two examination days will be announced to parents several weeks in advance.

The enrollment is limited to 165 students, of whom 40 are boarders. Boys are accepted for the entire school year only.

Upon notification of admission to the school, a deposit of $25.00 is required to hold the boy's place. This deposit will be credited on the first term's bill but forfeited in case of subsequent withdrawal.
Expenses

DAY BOYS
Tuition: $700
Luncheons at approximate cost.
Bus transportation prorated among users.

BOARDERS
Tuition: $1700
Laundry and cleaning service at cost.
Deposit for cash for personal expenses, postage, telephone, school publication, etc., $25.

OTHER CHARGES TO BE EXPECTED
Medical fee to defray cost of medical supervision, $10.
Doctor and school charges for special visits and infirmary use.
Fee for laboratory course, $10.
Athletic Association dues, $18.
Standard testing programs and gymnasium towels at cost.
Books, supplies, and athletic equipment may be purchased at the school. A limited amount of renovated athletic equipment owned by the school may be rented.

Scholarships
Through the Noble and Greenough Fund, the John Radford Abbot, Jr., Memorial Scholarship Fund, the Volkmann Scholarship Fund, and the Martin Allison Taylor Memorial Scholarship Fund, a limited amount of scholarship aid is available for worthy boys in financial need.
Applications are considered by a Scholarship Committee appointed by the Board of Trustees, and awards are made on the basis of character and academic achievement.
The committee welcomes applications for these scholarships from able boys who otherwise would be unable to attend the school.
Day Boys
Day boys take part in all school activities from the start of classes at 8:45 in the morning until 5:00 in the afternoon. They lunch at the School. The school makes every effort to arrange transportation from areas where the desire of a sufficient number of families warrants a bus route. The cost is prorated among the users. These busses arrive at 8:25 in the morning and leave at 5:15 in the afternoon.

Boarders
Boarders are accepted on a full-time or five-day basis. It has been the policy of the School to allow boys to return to their homes for the weekends, provided they have satisfied all obligations to the School. Such boys are thus able to benefit from a regular, disciplined life in close association with their classmates, and at the same time to maintain the all-important influence of home and family. The routine for boys who remain at school over the week-end is informal, with every effort being made by the resident masters to provide a pleasant and profitable change from the more regimented school schedule. Advantage is taken of the cultural and recreational facilities of Greater Boston.

Extracurricular Activities
The School believes strongly in the part played by extracurricular activities in the development of the student, and its size allows all boys to share in these opportunities. Members of the upper classes naturally take a more prominent part than do the younger boys, but all boys can participate in some activities. Boys in all classes write for the "Nobleman", the school magazine. All boys participate in the annual science
and hobby show. The Glee Club is made up primarily of the older boys, but the younger boys sing in some of the concerts. All classes are eligible for the Dramatic Club. The Sixth Class usually puts on a small play at Christmas. The Debating Club, which meets with other schools, is made up of boys in the upper classes, but members of the Third Class have a junior team that also debates interscholastically. the foreign language societies, the Cum Laude Society (the national secondary school society that honors scholarship) and the elected student council are limited to boys in the top two classes. Members of the First Class produce their own yearbook.

**Athletics**

Daily participation in athletics is compulsory and is considered a vital part of the school curriculum. Football, soccer, hockey, basketball, wrestling, baseball, and crew are the sports of the School's interscholastic competition. Tennis is offered in the Spring. The younger boys, properly matched in age, weight, and experience, take part in intramural competitions in all sports, and play a few outside games. Careful consideration is given to a boy's physical development, corrective exercises being prescribed when necessary. Classes in physical education are held for the younger boys.

**Courses of Study**

All boys must take five courses through the Second Class. English, which is compulsory in all classes, and three electives in the First Class year complete the requirements for the diploma. Mathematics and one foreign language must be pursued through the Second
Class. One science course is required in one of the last four years. World History in the Fourth Class and American History in the Second Class complete the required courses.

The courses offered are listed below.

<table>
<thead>
<tr>
<th>CLASS VI (Seventh Grade)</th>
<th>CLASS III (Tenth Grade)</th>
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<tbody>
<tr>
<td>English</td>
<td>English</td>
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<tr>
<td>Oral English</td>
<td>Algebra and Plane Geometry</td>
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<tr>
<td>Arithmetic</td>
<td>Civics</td>
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<tr>
<td>Geography</td>
<td>Latin</td>
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<tr>
<td>Latin</td>
<td>French</td>
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<tr>
<td>Music</td>
<td>German</td>
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<tr>
<td>Art</td>
<td>Biology</td>
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<tr>
<th>CLASS V (Eighth Grade)</th>
<th>CLASS II (Eleventh Grade)</th>
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<tbody>
<tr>
<td>English</td>
<td>English</td>
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<tr>
<td>Arithmetic and Algebra</td>
<td>Algebra and Plane Geometry</td>
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<tr>
<td>American History</td>
<td>American History</td>
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<tr>
<td>Latin</td>
<td>Latin</td>
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<tr>
<td>French</td>
<td>French</td>
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<tr>
<td>Music</td>
<td>German</td>
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<tr>
<td>Art</td>
<td>Chemistry</td>
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<thead>
<tr>
<th>CLASS IV (Ninth Grade)</th>
<th>CLASS I (Twelfth Grade)</th>
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<tbody>
<tr>
<td>English</td>
<td>English</td>
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<tr>
<td>Algebra</td>
<td>Solid Geometry and Trigonometry</td>
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<tr>
<td>World History</td>
<td>Modern History</td>
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<td>Latin</td>
<td>Latin</td>
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<td>French</td>
<td>French</td>
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<tr>
<td>Music</td>
<td>German</td>
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<tr>
<td>General Science</td>
<td>Chemistry</td>
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<td>Physics</td>
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<td>Public Speaking</td>
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</tbody>
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PLAN FOR FUTURE GROWTH

TEACHING - STUDYING ACTIVITIES
LODGING - BOARDING - SOCIAL ACTIVITIES

PLOT PLAN
SCALE 1" = 120'

LEGEND
- EXISTING BUILDINGS
- NEW BUILDINGS

GROUNDSMAN'S HOUSE
CENTRAL HEATING PLANT
MAINTENANCE BUILDING

ASSISTANT HEADMASTER'S HOUSE
HEADMASTER'S HOUSE

NEW SCHOOLHOUSE "SCHOOLHOUSE"

LODGING UNIT "TRAT" HOUSE "CASTLE"

GYMNASIUM
BASEBALL CAGE
BOATHOUSE
NEW GYMNASIUM

LOWER "CAMPUSS"

CHARLES RIVER

HOTLEY POND
NEW SCHOOLHOUSE
LOWER CAMPUS
NEW AND EXISTING GYMNASIUMS

UPPER CAMPUS
THE SCHOOLHOUSES AND LODGING UNIT