ARCHITECTURAL TRADITIONS APPEARING IN THE EARLIER BUILDINGS OF THE RICE INSTITUTE

If I recall correctly, I spoke to this group in the spring of 1928 along the line suggested in this paper, the purpose being to picture the initial planning and initial problems relating to the development of the general plan for the new college and the architectural forms chosen for its first buildings.

During the summer of 1909, President Lovett met with the members of the firm of Cram, Goodhue and Ferguson, Architects, whose offices were in Boston and New York. The result of these meetings was the employment of that firm to develop a general plan for the initial buildings and for the campus of the future.

The firm of Cram, Goodhue, and Ferguson consisted of the late Ralph Adams Cram, the late Bertram G. Goodhue, and the late Frank W. Ferguson. The character of their work had reached a degree of national recognition equalled by only the one or two other firms throughout the country. Their distinct field had been that of college building and church building. While generally thought of as medievalists because of the large number of gothic churches designed by them and because of the extent of collegiate gothic already developed in their building at both West Point and at Princeton, this was a rather natural reaction. However, examined with more care, one might find among their works of that time some very excellent buildings of Georgian tradition and some very beautiful works along the line of the Spanish Renaissance and a little later, especially from the office of Mr. Goodhue, a still greater freedom and wideness in modern expression.
The unique nature of the problem as far as the architects were concerned was that it could hardly be put into a definite program due to the fact that as a college, it did not exist. It had neither faculty nor students. It had what appeared to be an adequate endowment to support the initial program of a school of limited numbers, but only a portion of a university program. As a firm, we were working in the summer of 1909 on still further buildings for the campus at West Point, additional buildings upon the campus of Princeton in accordance with the new general plan which had been devised by Mr. Cram some two years earlier, on preliminary plans for the University of Richmond, and one or two college buildings at William's College and at Sweetbriar College, Virginia.

The tract on which The Rice Institute was to be built consisted of some 300 acres of level ground, quite low and subject at least in its western area to periodic overflow. There was no natural drainage adequate to protect the land. Except for a few trees along a very shallow stream at the west of the tract, there were practically no trees on the entire area. In nearly all directions blank prairies could be viewed for miles in the distance.

The shape of the tract was nearly triangular, its boundaries determined by barbed wire fences separating it from adjacent farms and prairie lands. On one side only was there a road, Main Street Road, which was the extension of the Main Street of the city. The site was more than a mile and one half beyond the city limits and the road was a poorly cared for county road flanked on each side by deep ditches which were full of water most of the year. Beyond the fact that this road was the only method of reaching the site and beyond the low and relatively swampy nature of the tract, a still further element in the problem was the universal acceptance by the
trustees of the desirability of placing the buildings that as many as possible would have the maximum benefit of the prevailing summer breeze from the Southeast.

It was natural for us to compare the 300 acres of land owned by The Rice Institute with the 60 to 80 acres normal for the campus areas of the well-known eastern universities. In these older universities, crowding had become evident as buildings were erected in the later years of the 19th century and the opening years of the 20th century. These eastern universities were seeking methods of enlarging their campuses by securing adjacent lands. Where such lands could not be secured, they sought other near-by areas for further university expansion.

Though the initial wealth of The Rice Institute could not provide either the number of buildings nor provide the faculty of size to compare with the eastern universities, still it was a definite part of the program that the general plan or master plan, would represent the spaces adequate for a fully developed university rather than a small college of liberal arts and that the assignment of spaces to the several appropriate divisions of a university plan should be as nearly adequate as the experience of that particular time, the year 1909, could indicate.

To this end, our office followed its regular practice. It was a practice quite unusual in American architectural offices. This practice consisted of posing the problem with as much information as we had at hand for a solution by the New York office under the direction of Bertram G. Goodhue and a simultaneous solution in the Boston office under the direction of Ralph Adams Cram. In other words, the process was that of architectural competition among ourselves for the benefit of the client.
This had been done in the case of St. Thomas's Church in New York and several other important instances. The solutions were compared side by side after reasonably complete sketch development and their merits and demerits recorded. Such a plan was followed in connection with The Rice Institute. As we view the triangular area available for use, you will note that approximately 2/3 of it could be considered as building area. The western 1/3 subject to periodic overflow would only become building area at a much later date when the county or the city could provide for very costly drainage systems.

The two solutions, that of the New York office and that of the Boston office, are widely different. Goodhue's solution indicated the use of the major portion of the land available with the buildings grouped around a very lengthy rectangle. This rectangle he visualized as one having the colorful quality of Asiatic groupings. He had recently visited Persia. He thought of a broad sunlit central area surrounded by deep shade resulting from heavy tree planting with continuous rows of buildings on the two long sides of the rectangle. This met in a very real way the request for maximum use of the prevailing summer breeze. The whole scheme was to be dominated at the western end by a commencement hall of octagonal form surmounted by a Persian type dome covered with iridescent tile. At the northern end of the tract nearest to the city, he suggested a faculty residence center following a graceful pattern of curving streets, which would seem to indicate a higher or lower contour than that of the tract. However, the tract as we have mentioned, was entirely flat and the advantage of such composition was necessarily minimized.

This plan of Goodhue's was to have its main entrance from the Main Street
Road at a point which would reach approximately the center of the long campus building group, therefore nearly a mile further away from the city than would be possible if entrance were had at the closest point of the tract.

The development of the Boston office under Mr. Cram indicated a pattern based on a grid made of equilateral triangles. From the confused experiences arising from replanning at Princeton and elsewhere, he was enthusiastic about diagonal short cuts from building to building. Much more important, however, was the sense of breaking the plan into component parts. His arrangement suggested the entrance at the nearest point to the city with an axis or roadway leading to a principal administration building. He in turn accepted the requirement for the majority of the buildings to be so placed to the prevailing breeze. This Cram plan, which was the Boston plan, suggested groups for science and engineering, separate groups for academic study, separate groups for library and graduate work, separate groups for residential halls and recreation. In its original form it had none of the convincing bigness of Goodhue's solution. The Goodhue solution seemed appropriate to Texas and to its vast dimensions. The Cram solution seemed more like an opening out of the narrower campuses of the eastern universities.

As result of the comparison of the merits and demerits of these first studies, it was my privilege to be assigned the work of studying and developing a general plan which would merge the good points of each of these schemes. The result was the final development of the so-called general plan of the Rice Institute which became a matter of record in the publications of the Institute, in the volumes of the opening of the
Institute, in national journals and to some extent, in international records.

This plan developed the identity of sections of the university as differentiated from others. It recorded the desire of the trustees to enter the property from Main Street Road as quickly as possible upon reaching the Institute site. Main Street Road throughout the last mile or so toward the Institute was rough and undesirable. Therefore, it was appropriate to get into new campus roads at the earliest opportunity. The many studies indicated quite clearly that the most appropriate main axis would be one that paralleled the long base side of the triangle where the Institute land met the borders of adjacent farms. Future developments in appropriate rectangles, quadrangles, etc. worked out best if this base line was accepted. The plan provided for a central academic court consisting of an administration building and four classroom buildings. The main roadway divided in front of the administration building and wrapped around behind the academic court in two long parallel roads reaching an overall dimension almost equal to the great scheme of Goodhue's plan. However, the buildings in the academic court and in the greater court which was supposed to contain further academic buildings and museums, as well as the commencement hall, extended only some 1300 feet as compared with the half mile of the Goodhue plan. The balance of the dimension was to be in the open gardens of the Persian type with a division of the open air theater at the borders of a stream to the west. Additional entrances from Main Street Road were set up to provide for convenient circulation to the academic court, to the residential court and to the areas of recreation. The residential court for men consisting of four buildings of approximately 300 capacity each, was to be completed at
one end by the student union building and at the other by the gymnasium and recreation grounds.

As one entered from the main entrance the land to the right of the main drive was assigned in part to a series of residential roadways providing for faculty homes and the home of the President. A little further on, a large area was set aside for a residential group for women and then beyond the division of the entrance road were the courts assigned to the science and engineering groups with the power plant at the rear of these groups.

Still further along this road and on the main secondary axis leading through the residential courts and across the academic court, was to be the library with the graduate schools forming secondary courts behind the library. Still further leading from the graduate court and cut toward the stream, the balance of the land was to be assigned to a botanical garden. These were the initial conceptions of the major plan.

In order to begin the planning of buildings, the first essential was that of providing all services; neither light nor power, water nor sewage nor drainage were to be had from the city. The power plant had to provide all of these services and continued to do so for quite a number of years after the Institute began to function.

The first building was to be the administration building providing offices of administration, classrooms to meet the initial loads of the college and a modest area assigned for the library. The second buildings were to consist of the power plant with the first unit of engineering quadrangle attached to it. This unit was to provide for the initial work of the Institute in the fields of chemistry and physics as well as architecture and engineering. The third building, South Hall was to be part of
the first residential group consisting of one wing of that group together with certain commons room and dining room with kitchens. These constituted the three buildings upon which building was started either in 1910 or early 1911 and which were brought to completion for the opening of the Institute in September, 1912.

With this series of facts and decisions as our background, we can understandably consider the subject of this paper, namely, Architectural Traditions Appearing in the Earlier Buildings of The Rice Institute.

The problem was that of the building of the three initial buildings which by the disposition in their respective sections in the general plan, would set up the architectural design and appearance of not alone those buildings, but the adjacent buildings which would eventually complete the proposed groups.

From Mr. Cram's point of view, Gothic architecture had reached its highest development in three fields of building; the home, the school, and the church. By a long continued preexistence of this opinion, he had developed an obstinancy concerning buildings of classical or renaissance tradition, claiming that as far as the fields of the home, the church or the school were concerned, they were part of a pagan civilization. No such obstinancy was characteristic of Mr. Goodhue. However, several facts were very clear. First that in the warm climate of Houston, in this low, level, swampy prairie land, collegiate Gothic as it was developing in the Eastern universities reflecting the quadrangle of Oxford and Cambridge was totally inappropriate. The stone masses, the snow shedding roofs and the relatively small windows would be historical examples totally out of place. This was understood and accepted by all of us in both the Boston and the New York offices.
A logical development of the Colonial styles as of the South and Southwestern sections of the country was possible. From the charm of the older buildings on the campus of the University of Virginia, a style which reflected more truly the colonial work in Louisiana, Georgia, and the Carolinas appeared desirable. However, Mr. Cram's position in this regard was that it was still a continuation of Romanesque or pagan architecture even though some excellent work had been done by the firm at the college at Sweetbriar, Virginia in this style.

Finally because of the historical traditions of Texas and the Spanish monuments remaining in the missions in the San Antonio district, there seemed to be an appropriate quality indicated by design along the lines of the Spanish Renaissance. This, however, was never tested for the simple reason that the trustees were distinctly opposed to a style that reflected Mexican qualities. The relations of Texas to Mexico were in no sense as cosmopolitan as they are today so that field could not be considered.

However, underlying this thought of style, which was the unfortunate habit of both college executives and architects in the early years of this century was a refreshing and creative stubbornness on the part of Cram to set up a theoretical style essentially and thoroughly a Christian style. As we all know, Gothic architecture never developed successfully in Italy. The great monuments of medieval art in Italy are those of the Romanesque. Therefore, Cram posed this idea; that we should try to imagine and design in a style which might have been the historical fulfillment of the Romanesque in Italy had that fulfillment not been interrupted by the unfortunate coming of the Gothic style and later by the Renaissance.
This at least steered us away from direct likeness to the pattern of buildings of the past. It meant that as the first works were developed, they were necessarily somewhat of the character of the architectural thesis. They were studies which might attain considerable merit, but were not necessarily solutions. They could serve as the foundations for still further and more complete solutions as experience was gained from the actual buildings themselves. Such was indeed the experience which prevailed until 1925 to 1930.

From your point of view, you are probably questioning just what was the nature of this Romanesque architecture of Italy from which we were to begin. In the majority of instances, the buildings were buildings of brick with or without modest stone trimming. They were buildings of relatively modest dimension and well suited to the purposes for which they were built. However, historically, the terms are likely to lead to confusion. One cannot help thinking of the richer buildings of that period which were of the Byzantine style or the Italian Byzantine style reaching such elaboration as St. Mark's at Venice. Looked at honestly, it was perfectly evident that the Gothic incrustations of St. Mark's were among the initial evidences of the complete decline in the Italian Romanesque.

Using this map for geographical relationship, the fine works of the Italian Romanesque are to be found in the northern plains of Italy in what is spoken of as Lombardy, from Bologna and Revenna in the South to Milan and Verona in the north. The examples in each city and town were numerous and many of the works were works of great beauty. When Mr. CRM first gave this direction to me in the office, he suggested the study of Venice and possibly Milan. I suggested that he certainly add to it
Bologna and Revenna. The resulting study and research led us to consider additional works in the countries bordering the Eastern shores of the Adriatic in Dalmatia and Northern Greece. In these countries some exquisite monastic buildings were built in the 9th, 10th and 11th centuries which showed even greater richness and greater design innovation than had been true of Bologna or Revenna.

As I have mentioned, the Romanesque architecture in Italy was a colorful architecture within and without. It was relatively simple. For the most part it was a brick architecture. The vast number of examples displayed a constancy of simple decorative form. As our drawings began to take form it was evident that those which were being held simple or strictly of a brick type, relatively free from profuse decoration, seemed to compose in a manner more suitable to our modern age.

The administration building alone retained considerable rich ornament. However, if I could only show to you its earliest form as indicated in a sketch made by Mr. Cern himself, you would see instantaneously how true it is that the building met with the constant and determined simplification. This first sketch that I refer to was a view of the long facades with the round-arched cloisters and the 12 columns rising from the piers of the cloisters. Behind these columns were to be open loggia for the full length of the building. Each of the columns was surmounted by a Gothic niche and finial as elaborate as those of St. Mark's in Venice. Twelve gilded saints, apostles or scholars would have been necessary to fulfill the picture. The general masses were substantial, but the design pattern was very stringy in its verticals and quite confused by the heavy central tower. At that time, the office served
in a consulting capacity for Princeton University and Frank Miles Day of Day and Klauder of Philadelphia, architects of the new freshman dormitory group at Princeton, came into the office. Cram and I were discussing some element of the Princeton plans and inappropriately, Cram's sketch was resting on the window sill next to his desk. Day happened to glance at it and with a chuckle asked, "Who's going to buy that wedding cake architecture?" Conversation was confined from then on to the matters of Princeton, but Cram's enthusiasm for his labors ended. This made it possible for the office to give very thorough study to the excellent brick work at Stephano at Bologna, the marvellous combination of brick and stone at St. Luke's in Stiris, Greece, and to architectural ornament having the refinement characteristic of Revenna and of the earlier work of Venice and Verona.

It would be impossible in this short paper to point out individually the historical examples which served as creative models for new ornament different from the historical example, yet characteristic of the refinement of the better buildings of the Romanesque period.
USE OF SLIDES SHOWING:

St. Mark's, Venice
Ducal Palace, Venice
Details of Venetian Capitols and Balastrades
Examples from Bologna, Como, Bitonto and others

The first buildings clearly showed the direct evidence of architectural study of the details of the Italian Romanesque such as I have indicated. The buildings themselves were fortunate in that they were built of a colorful marble secured from an abandoned quarry in the state of Oklahoma and with the local Houston brick of excellent pink-gray color. In other respects they were buildings of rather rigid rectangular form. In the case of the three buildings first built, the administration building was the most elaborate both in detail and in material. There was a great deal more simplicity in the first wing of the engineering building, a brick building accented by the campanile like form which enclosed the necessary smoke stack for the power plant. The third building, the first dormitory group, was a building of brick and stucco. Stucco had been a usual material in residential work in Italy and the examples from which we worked and which appealed to us most were examples from the city of Genoa. These seemed to have more diverse composition, freer expression of their forms than those of other cities and of course, we sought those that preceded the extreme regularity which came with the Renaissance.

Several years elapsed after the completion of the first buildings and the opening of the college before another building was begun. This building was the Physics Building. Its position was within the academic court, a site originally reserved for academic classroom purposes. However, the limited means available for building and the possible long period of time before any single court would be brought to completion led
to the placing of this science building immediately next to the Administration building. There had been this understanding on our part as to materials to be reflected in the general plan. The buildings of the academic court were to be trimmed with marble. Those instructional buildings of other courts were to be trimmed with limestone. The buildings of residential areas were to be preponderately of stucco finish with brick or limestone trim. This accounts for the interpretation that the amphitheater and research wing of the Physics Building was really a part of the engineering and science court. Consequently the large rectangular mass of the Physics building facing the academic court was trimmed with marble while the amphitheater wing was trimmed with Indiana limestone. The building reflected more historical detail and Venetian ornament than would have been appropriate to a simple science building, but its proximity to the administration building seemed to justify this treatment.

Following the Physics building in interrupted succession, the East Hall of the dormitories was built and still later following World War I, the West Hall was built, each conforming to the general conception of material and treatment set up by the portion of the first residential hall as built in 1912.

Still later in 1924 and 1925, studies were made for the large laboratory building to be devoted to Chemistry. By this time, our acquaintance with the possible adaptation of historical or traditional qualities had been well advanced. There was no longer the conception on our part of a simple rectangular mass as constituting a desirable form. This was still more apparent when one considered the required areas which the Chemistry laboratory problem set up. It was necessary in order to keep it in proportion to the other building sites of the future courts of engineering
and science to add an additional story rather than to spread it out unseemingly across the prairie. The identity of the unit laboratories was made very evident in the form of the building. Chemistry laboratories prior to 1925 had consisted for the most part of one or two great laboratory areas suitable for the experiments and laboratory work of a great many students within a single room. The idea of breaking this student content into smaller groups and designing appropriate laboratory spaces for these smaller groups was developing in the years following World War II and to such studies it is our opinion that we definitely contributed usefully in providing for 12 unit laboratories in place of one or two large laboratories. It was also true that research spaces were coming to be accepted as an essential part of science laboratory planning and consequently a large portion of each floor's area within the new chemistry building was assigned to research space in many units of approximately similar dimension. By planning the building to meet these science requirements rather than planning it to meet a stylistic appearance we were able to set up a much more interesting geometry consisting of wings and courts expressing the various functions with the building. We were able to give a great deal more light and ventilation than traditional forms would have indicated and still I feel we accomplished a building in the spirit of the Romanesque to possibly as great a degree, or even a greater degree than had been done in early buildings.

Following the completion of the Chemistry building, the next work of architectural value was that of the small building given by Mr. George Cohen for the purpose of a faculty club. Here again, still further freedoms of geometric composition conforming in their masses to the best
modernism than being developed in the cities of Holland and Belgium was reflected. However, it was still entirely possible to hold a consistency with the elements of Romanesque architecture set up in the original buildings of the Institute.

A long interval followed before any building of importance was done in connection with the campus or toward the fulfillment of the general plan. When this came about, it came in the form of the library in which we are meeting. Elements of cost, elements of material and to some degree, elements of taste were reflected in the very pronounced movement away from the earlier traditions. These were necessarily reflected in the adjacent building, Anderson Hall, which was attached to the library as part of the court. Consistency in the color values, in the relative proportions of brick and marble used was retained, to a sufficient degree to give comfortable setting to these newer buildings.

If we will recall, our early reference to the plan forms of Mr. Goodhue and of Mr. Cram, the great openness of Goodhue's scheme, a central court fully one half mile in length which when finally developed in the general plan still gave us a central academic court in excess of one fourth mile in length with an additional one fourth mile of Persian gardens extending its lines to the full one half mile length. With the memory of this type of planning which caught academic interest throughout this country and abroad and seemed consistent with the open spaces of Texas, I feel it must be recognized that placing the library in the position in which it was placed reduced the academic court forever to one fourth the dimension conceived by Goodhue and to one half the dimension accepted and confirmed by the general plan of the Institute. Time alone can show to what degree these will be reflected in a feeling of crowding and smallness of limits,
While more order will certainly prevail than was true of the campus plans of the Eastern Universities in 1909 when The Rice Institute plan was formed, still some of their congestion will eventually be reflected. Clear definition of area will become very much more difficult.

The great new stadium has been placed at an appropriate area. If it was to be placed on the campus, the area chosen was one which from the beginning had been left without assignment. Drainage and other similar conditions had led to this choice. However, a great area extending on this side of the stream was part of the formal finished campus area within the great courts of the academic buildings, libraries, etc. A large part of this important area has passed to automobile parking area surrounding the stadium. What is left seems to wrap itself formlessly around the library. It seems a chaotic void. Such voids eventually lead to chaotic building. It is very important that serious study be given within the next decade to the recovery of some of the greatness in the original plan with this valuable area of our campus.