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Aymar Embury II, Architects.

House and Plans, DeVere H. Warner, Greenfield Hill, Conn.

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SAGE FOUNDATION HOMES, FOREST HILLS GARDENS, L. I.

Grovernor Atterbury, Architect.
FOREST HILLS GARDENS.

This group of buildings, a number of which are illustrated in this article, is the concrete embodiment of one of the most interesting ideals in real estate development which has thus far been attempted in the United States. It is an experiment more or less along the lines of the "Garden Cities" of England, but with a slightly different class of occupants in mind, and has been worked out, not only by a corporation for the benefit of its employees, but by an independent concern, whose business is to afford an opportunity to a large class of our citizens to improve their condition of living. The idea which prompted the Forest Hills Gardens was to take care of that vast and very deserving class of American people whose upbringing and education have made them people of refinement, accustomed to, and appreciative of, artistic quality in their surroundings, but whose means do not enable them to purchase, under any of the ordinary conditions, country or suburban homes. The property was chosen primarily because it was one of the few available and attractive pieces of land close enough to New York to make both the expenditure of time and fare in traveling to and fro, as little as possible and also because of its excellent transit facilities.

The directors of the Sage Foundation then chose an architect and a landscape architect: Grosvenor Atterbury and Olmsted Brothers—whose qualifications for work of this kind were so very evident that no more need be said. The company, in conjunction with their architects, devised a scheme for the development of the property by which they achieved a sufficient latitude of cost to take care of almost any one of the class of people which the property was designed to accommodate. Beginning at the station they built around the so-called "Station Square" a group of buildings which are practically suburban apartment houses and which contain a variety of apartments ranging from a single room and bath, up to five or six rooms, with a hotel and restaurant at the eastern end. The hotel affords an attractive and comfortable accommodation for any season of the year at moderate rates and is under management directly controlled by the company. Immediately beyond this station square are small two family houses and small block houses of various dimensions. As the property spreads out fan-wise from the station various other houses have been constructed, becoming larger and larger as the distance to the station increases, and as these houses are larger so the lots on which they stand increase in size. The scheme seems so entirely rational that it is surprising it has never been before attempted except in a more or less hesitating and tentative manner in Bronxville. The value which the scheme has over that of the ordinary real estate development consists mainly in the superior quality of both design and construction of the houses over any real estate development where houses of as low cost have been constructed, and in the fact that the company is able to make its loans direct so that the houses can be purchased on the installment plan without the payment of heavy bonuses. Further the Sage Foundation Homes Company has provided a scheme by which, if the purchaser finds himself unable to further continue the payment of installments, and wishes to remove from the property it has a sort of "cash surrender value" similar to that of a life insurance policy. This latter clause is one of the most important things about the whole proposition, since it very frequently happens that people whose living expenses are dependent upon their incomes find it impossible because of sickness, or for other reasons, to continue the payment of installments and their equity is, as a rule, swept away.

Now as regards the buildings themselves: the buildings around the station square have been very beautifully designed to make each one as picturesque and interesting as it is possible to conceive. The center of the square is occupied by a small fountain of much interest and picturesquely designed. Each of the buildings, while the general type is homogeneous, is sufficiently varied from the others to completely avoid monotony, and the whole ground is dominated by a tower containing bachelor's quarters. The material of this station square is reinforced concrete, except the tower which is a steel building; the buildings are roofed with tile and the wall surfaces resemble half timber construction, of which the verticals and cross bars are cast concrete with a very interesting surface of cement and crushed brick, and the panels are of red brick. This aggregate is produced by a crusher which grinds up most of the refuse from the building operations on the grounds. The roofs are entirely of tile and the trellises of bent channel-iron sections. The station itself is a fascinating piece of design and the manner in which the railroad track running through the property on a high
Y. M. C. A. BUILDING, PHOENIX, ARIZONA.
Trost & Trost, Architects.
fill, has been masked and made to form one of the sides of the square (and not the least interesting side) by concrete work and planting, is a most charming feature. The work at the present time is practically completed as far as the station square goes, and the fifty or more of the out-lying buildings are in various stages of erection or are already completed. Most of them have been designed by Mr. Atterbury, and the remainder by various other architects know principally by their country house design. Wilson Eyre, Albro and Linderberg, F. J. Sterner, John A. Tompkins, J. T. Tubby, Jr., and Aymar Embury II; but by far the larger portion are from Mr. Atterbury’s office and possess in a very high degree the qualities which have marked Mr. Atterbury’s success.

The most interesting thing to the architect about the whole scheme must be seen to be appreciated, and that is its color. Mr. Atterbury put a great deal of study and care into the question of surface textures and color for the stucco work before any of the finish was applied, and while the whole group is somewhat sombre in tone it is a most interesting revelation of the possibilities of color schemes in brick, tile and cement, from which materials in various combinations, all the effects have been obtained. Almost all the houses are varieties of combinations of brick and stucco with the use of wood limited only to the piazzas and window frames, and the surprising variety of results obtainable in this very limited range of materials well repays the time spent in a visit to Forest Hills.

So far as can be learned there is only a single point in which the scheme has not been successful, and as to this there is a possibility of misunderstanding. It is said that the aim of the company was to prove that fireproof, or semi-fireproof houses could be constructed as economically as frame houses, but that results so far as cost goes have shown that frame construction is still considerably more economical. This may be a mistake, but from the facts at hand it is believed to be correct.

Taken as a whole, even in its present more or less incomplete condition, the experiment is artistically one of the greatest successes which we have had in this country, every detail of the work has been very carefully designed, the lamp-posts for example, being charming pieces of iron work; the central group tremendously imposing, and the smaller buildings possess each some mark of individual interest.

**MEASURED DRAWINGS.**

In this number of Architecture we start a series of measured drawings of various architectural details of general value to both architects and draughtsmen. The subjects have been carefully selected from examples by architects of good standing whose work is of a character which makes it useful for reference to the majority of the profession.

The drawings are made by Walter P. McQuade and represent what Architecture considers a high technical standard, without going into useless elaboration impossible to follow in working drawings. The aim of this series is to show how the results illustrated in the photographs are attained and also the methods of details employed by the various men whose work is illustrated.

The next number will be of work by Charles A. Platt, and following this will be details by Albro & Linderberg and other men of similar high standing.

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**CORRESPONDENCE.**

Owing to the number of inquiries which Architecture receives from time to time, some of which appear to us to be of very general interest, we intend to publish such questions with their answers monthly. Where a definite and accurate answer is possible this will be made, but where the answer is largely a matter of opinion we shall publish that which seems to us a consensus of the best opinion. We invite criticisms.

Editor of Architecture:

I read every once in a while of the Tarney act as having some influence on the awarding of public works in Washington to various architects. Can you tell me what this act is?

Yours very truly,

L. A. T.

[Public—No. 77.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he is hereby, authorized in his discretion to obtain plans, drawings, and specifications for the erection of public buildings for the United States, authorized by Congress to be erected under the supervision and direction of the Secretary of the Treasury, and to award the contract for the construction thereof by competition among architects under such conditions as he may prescribe and to make payment for the services of the architect whose plan may be selected out of the appropriations for the respective buildings:

Provided, That not less than five architects shall be invited by the said Secretary to compete for the furnishing of such plans and specifications and the supervision of such construction: And provided further, That the general supervision of the work shall continue in the office of the Supervising Architect of the Treasury Department, the Supervising Architect to be the representative of the Government in all matters connected with the erection and completion of such buildings, the receipt of proposals, the award of contracts therefor, and the disbursement of moneys thereunder, and perform all the duties that now pertain to his office, except the preparation of drawings and specifications for such buildings and the local supervision of the construction thereof, the said drawings and specifications, however, to be subject at all times to modification and change by the plan or arrangement of building and selection of material therefor as may be directed by the Secretary of the Treasury.

Approved, February 20, 1893.

Editor of Architecture:

What stand does the English Society of Architects take in reference to architecture as a profession?

L. D. T.

Mr. C. McArthur Butler, Secretary of the English Society, advises us that their code is as follows:

It is unprofessional for an architect—

1. To engage directly or indirectly in any of the building trades, except as owner.
2. To guarantee an estimate or contract by bond or otherwise.
3. To accept any commission or substantial service from a contractor or from any interested party other than the client.
4. To advertise.
5. To take part in any competition the terms of which are not in harmony with the principles approved by the Board of Professional Control.
6. To attempt in any way, except as a duly authorized competitor, to secure work for which a competition is in progress.
7. To attempt to influence directly or indirectly the award of a competition in which he is a competitor, or in which he is interested in any other capacity.
8. To accept the commission to do the work, either personally or by partnership, for which a competition has been instituted if he has acted in an advisory capacity either in drawing up the programme or in making the award.
9. To injure falsely or maliciously, directly or indirectly, the professional reputation, prospects, or business of a fellow architect.
10. To undertake a commission while the claim for compensation or damage, or both, of an architect previously employed, and whose claim has been referred to arbitration, or issue has been joined at law, or unless the architect previously employed neglects to press his claim legally.
11. To attempt to supplant a fellow architect after definite steps have been taken toward his employment.
12. To compete knowingly with a fellow architect for employment on the basis of professional charges.
IS THE TARSNEY ACT TO BE REPEALED?

A nother example of the pernicious practice of incorporating general legislation in general appropriation bills is found in an amendment to the sundry civil appropriation bills recently reported to the House, repealing what is known as the Tarsney act. This is a law, passed some years ago, empowering the Secretary of the Treasury at his discretion to obtain plans in competition from architects in private practice for public buildings erected by the Treasury Department. As a large majority of Federal Government buildings come under the jurisdiction of that department the importance of this permission was very great, and the effect of the legislation has been to bring about a great improvement in the architectural design of our public buildings.

When the supervising architect of the Treasury was the sole authority in such matters there was a painful monotony and lack of individual quality in the buildings erected by the United States—to put the matter in the kindest and mildest form—and this was the natural product of bureaucratic methods. Since the passage of the Tarsney act, however, the transformation in style and quality has been very remarkable, the New York Custom House and some of the more recent postoffices illustrating the advantage of drawing upon the architectural talent of the country at large and of utilizing the personal attention of experts familiar with local conditions and inspired by progressive ideas and methods.

The repeal of the Tarsney act does not appear to have been asked for by the Treasury Department, nor urged by any public body, and the prospect of a return to the system of designing public buildings “by the yard,” with much more than a prospect of a return to a stereotyped and unworthy form of architectural design, should arouse an emphatic protest from the people of the United States. The American Institute of Architects is naturally arrayed against the change, for, entirely apart from the injustice of excluding its members as a professional class from the wider opportunities of Government service, the proposed repeal is a backward step making for the deterioration of architectural taste. The question at issue is entirely too important to be the subject of a mere “rider” to an appropriation bill, and should not be decided until after full discussion and a public hearing upon its merits.

SCHOOL OF ARCHITECTURE, COLUMBIA UNIVERSITY.

On the first of July, Professor Hamlin, who has been the Executive Head of the School of Architecture of Columbia University since the retirement of Professor Ware in 1903, surrendered the administrative office into the hands of Professor Austin W. Lord, of the firm of Lord & Hewlett, who has been appointed by the Trustees Professor of Architecture and Director of the School. This action was taken pursuant to the requests of Professor Hamlin that a new professor be added to the staff of the school with special charge of the design and theory, and that so soon as
OFFICE BUILDING, ECONOMY CONCRETE CO., NEW HAVEN, CONN.

Cram, Goodhue & Ferguson, Architects. Lee Lawrie, Sculptor.
vation. By constant training one soon finds that the mind is recording the things observed and that one can call upon it to produce these pictures whenever they may be desired. It is claimed that the Emperor Napoleon could walk through a street and tell the number of windows, doors, etc., that were in the houses. He was so used to mastering details that he made a complete record of what he saw.

It may be said by some that it is unnecessary to burden one’s mind with the details and that some large and important matter may thus be excluded. This does not seem to be true, for the mind is so constructed that the more we give it to hold the more we enlarge its capacity and develop its accurateness.

If one is called upon to take up the development of a property, the first thing to be done is to go and look at the land and observe all the conditions on the plot and the adjacent properties; the exposure, the climatic conditions, the altitude, the direction from the town or railroad depot, the condition of the road, and the views from the road, and the houses, the direction of prevailing wind, gardens, etc., the class of development along the approach to the railway station; the railroad and the train service, conditions of the cars and class of people in the cars. The trees, shrubs, plants and field crops that are growing naturally on the property and the surrounding country. The streams and how the fields are watered and the possibility for draining the swamp areas, from whence to secure a water supply and how the drainage can be taken care of. The soil, the rocks, is the soil sweet or sour, are the trees healthy and do they grow fast, are the environments of the neighborhood good, what are the possibilities for improvements.

Is there a good location for the house, for the stable, for the garden, greenhouse, garage, farm buildings; can first-class crops be produced and where is the market. Is it a good country in which to raise stock, to raise poultry, horses, etc. What are the amusements and sports; where is the church, schools, stores, etc. These things should all be recorded automatically and after the visit and the return to the office and the topographical survey has been received which mechanically is the record of the things the place possesses, one can fill in all the gaps with the information stored in one’s head. This is invaluable and gives a basis for the formation of an opinion which is worth something stored in one’s head. This is invaluable and gives a basis for the formation of an opinion which is worth something.

If one is called upon to take up the development of a property, the first thing to be done is to go and look at the land and observe all the conditions on the plot and the adjacent properties; the exposure, the climatic conditions, the altitude, the direction from the town or railroad depot, the condition of the road, and the views from the road, and the houses, the direction of prevailing wind, gardens, etc., the class of development along the approach to the railway station; the railroad and the train service, conditions of the cars and class of people in the cars. The trees, shrubs, plants and field crops that are growing naturally on the property and the surrounding country. The streams and how the fields are watered and the possibility for draining the swamp areas, from whence to secure a water supply and how the drainage can be taken care of. The soil, the rocks, is the soil sweet or sour, are the trees healthy and do they grow fast, are the environments of the neighborhood good, what are the possibilities for improvements.

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So to return to the original point; it may be said that the power to make truly scientific and accurate records of each observation of natural phenomena, with a fullness of detail which may make such records perfectly clear, and with a realization of color, grandeur or prettiness, ugliness or beauty, should give one the courage to start upon the road of landscape design with the knowledge that he has at least one of the attributes which go to make a successful practitioner.

BUILDERS' OFFICIALS IN THE MIDDLE AGES.

The following list probably includes all officials commonly employed by Medieval builders:—Clerks of works, masters of works, setters over work, overseers, surveyors, deputy-surveyors, paymasters, purveyors, and builders' clerks. To some extent, as we shall see, the work of any one of the above-named officials was at times carried out by any other of them, says the London Engineering Journal. In more than one instance we shall see that one man executed the functions of no less than three officials.

In modern times this official is known as the Clerk of Works, but in Medieval days he was spoken of as the Clerk of the Works (in the Record Office MS. 464-20 "Clarke of the Worke's"). It is probable that many Medieval accounts recording the expenditure in wages and the cost of materials purchased were set down by the builders’ clerk acting directly under the authority of the clerk of works. We may suppose the actual accounts as they remain to-day
GYMNASIUM, U. S. MILITARY ACADEMY, WEST POINT.

INTERIOR, CHAPEL, U. S. MILITARY ACADEMY, WEST POINT.
CRAM, GOODHUE & FERGUSON, ARCHITECTS.
F. B. Johnston and M. E. Hewitt, Photo.
DOOR TO CRYPT, CHAPEL, U. S. MILITARY ACADEMY, WEST POINT  
CRAM, GOODHUE & FERGUSON, ARCHITECTS.
F. B. Johnston and M. E. Hewitt, Photo.
COURT, POST HEADQUARTERS, U.S. MILITARY ACADEMY, WEST POINT.

CRAM, GOODHUE & FERGUSON, ARCHITECTS. F. R. Johnston and M. E. Hewitt, Photo.
COURT ENTRANCE, POST HEADQUARTERS, U. S. MILITARY ACADEMY, WEST POINT.

CRAM, GOODHUE & FERGUSON, ARCHITECTS.

F. B. Johnston and M. E. Hewitt, Photo.
TOWER, POST HEADQUARTERS, U. S. MILITARY ACADEMY, WEST POINT.  
CRAM, GOODHUE & FERGUSON, ARCHITECTS.  
F. B. Johnston and M. E. Hewitt, Photo.
ENTRANCE AND PLANS, HOUSE, NICOLL FLOYD, JR., GARDEN CITY, L. I.

Aymar Embury II, Architect.
ENTRANCE AND PLANS, HOUSE, GREAT NECK, L. I. (See Measured Details No. 1.)

Aymar Embury II, Architect.
to have been made up from entries set down at the time. Indeed, we sometimes see in these accounts a statement that the expenditures recorded may be seen in greater detail in other books. Of Medieval building accounts remaining, set down under the authority of the Clerk of Works, perhaps one of the most interesting is that in the Record Office labeled Exch. Acc. 504-2. In this MS. we see that the "clerk and surveyor of the sayde works" was paid at the rate of 4s. a day to cover his "ordinary rydynges costes from place to place to know his grace's pleasure not only for surveying of the foresaise castells and mannours for byuyldyngs and reparaung of the same, but also for rydyng dyvers tymes for makynge of payments for the foresaise byuyldyngs and reparacions done." For his "ordinary boote (boat) hiren" he had 20d. a day, and "for his ordmarye ffe fee belongynge to the foresaise office as Clerkre and Surveyor of the sayde worke at isis. the daye, over and besideys vid. the daye more to hym allowyd for a Clerke to make the books." In MS. 464-20 we see that Laurence Norton was Clarke of the Worckes in 1546. He was paid 8d. a day for "makynge of purvycion of layles, tyle, tyllepyn, lime," etc.; for procuring workmen, for overseeing the workmen, and for making up the books. Norton was paid his last wage on October 3, 1546, the new clerk commencing his duties as "clarcke of the worckes" on Monday, the 5th, and receiving his first wage on Saturday, the 10th. In MS. 454-2 the clerk of works is paid but 6d. a day. The page in which such payment is entered recording also the payment to labourers of 5d. a day. The following order to a Clerk of Works in the year 1517 is to be seen in the Record Office MS. 474-9. Such orders, so common at one time, are now rarely met with. "We wol and commaunde you, that ye with diligence
upon the sight hereof, ye deliever or cause to be delievered unto
our trusty servant syr John Nevell, Knight, towards the
buylding of a house at Mile ende, oon hundred thousande of
breke and twenty quarters of lime, being of oure owne store
and provison and to be delievered at the said Myle ende at
oure owne propre costes and charges. And this our lettres
shal be your sufficient warrant and discbarge in that behalf.
Yeuen vnder our signet at our manour of Grenewiche, the
ixth daye of Julye, the ixth yer of our Reigne."

"To our trusty and wel beloued servant,
"Henry Smyth, Clerk of our workes."

Masters of Works are rarely mentioned, but in the time
of Henry VIII, a carpenter of the name of John Kervcr
eventually rose to be a "Master of the Kings Worke" in the
district of North Wales. In one of the many records of
building operations carried out under the authority of John
Kever, we find the entry of a payment to himself "for over-
seying and settyng a work the seide workemen" (MS. 488-
30). Here we find the same man both Master of the Works
and Overseer. In an account of certain building operations
mention is made of wages paid to "ouersaies" (MS. 488-15).
In MS. 504-2 a Laureance Bradshawe received 16d. a day,
he is called "The Setter forth of Worckes and Ouersear of
Worckmen." In another place he is described as "The Setter
out of Worckes." Subsequently Bradshawe's wages were
reduced to 12d. a day, excepting on those days when he was
out "riding," on which occasions he was paid 20d. per day.
In MS. 464-20 Thomas Jauncy is paid 6d. a day for "over-
seying" that the workmen "do they're dute," and for making
up the books. In this case we see the same man doing the
work of an overseer, and also that of a builder's clerk. It is
also to be noted that the side heading to this entry is "clarcke
of the Worckes." He executed the functions of three officials.
The purveyor was the official whose business it was to travel about to secure the various materials needed by the
builder. In MS. 504-2 the duties of the Purveyor are set
down very clearly.—"Purveyor, Provysydynge as well carriage
for tymber, borde, lathe, quarters, and other necessaries haued
out of Suffolk as also for carrryage here nere home of tymber
and plankedes bought." In MS. 479-11 we read of expenses
entailed by "the purveyors ryding about sondry provysions
for the said worckes." The purveyor was not a highly-paid
official; he was probably paid about 8d. a day in addition to
his expenses for horse hire. Sometimes he is placed in the
same group as the clerks; the following entry, however, draws
a distinction between the purveyor and the clerk: "ii pur-
veyors, ii clerkes, and sondry labourers daily retayned." In
MS. 504-2 John Downe is "purveyor" at 6d. a day.

In MS. 488-27 we read of the "deputy surveyor," an
official very rarely mentioned in builders' accounts. In MS.
489-17 we see that Robert Duryhill was surveyor, paymaster,
and purveyor; he rode "from place to place for provysions." Official paymasters are rarely mentioned, the payment of the
workmen probably generally resting with the clerk of works.
In MS. 545-29, Jefery Gates is "paymaster to the worke-
men." Accounts are set down under his authority in MS.
544-12. Laurence Bradshaw was a paymaster, an overseer,
and one who "set" the men to work. The sum of 5s. 4d.
is entered in MS. 504-2 as having been paid him "for Rydinges from Westm (inster?) to Dunstable to paye worke
men there by the space of iii days." Robert Pilling rode
with him "for the savgearde of the same monye," receiving
4s. for so doing. In MS. 474-3 John Bayle is purveyor and
overseer, too, at 5d. a day. In MS. 465-20 Hector Hassbeley
is paymaster and surveyor at 12d. a day. In MS. 489-16 the
surveyor sees to the workmen and acts as purveyor, receiving
a stipend of £10 a year, for which sum he was expected to
provide the horse, which was practically part of the equipment
of a purveyor. An instance of a surveyor called on to fur-
nish a report and estimate for the repair of a building is to
be seen in MS. 458-9.

The ordinary builder's clerk was paid 6d. to 8d. a day.
(MS. 477-12.) In MS. 504-2 we read:—"The Clerk. The
Clerke keeper of the cheks boke and ouersee of the work-
men." Here a clerk acts as overseer. The check book was
possibly a volume in which the materials were entered as
they were delivered on the site.

FACING MATERIALS.

I T was long one of the recognized canons of architecture
that the construction of a building should be
indicated in its external design, says the London En-
ing Journal. This, in the main, may be generally
accepted, yet even the most casual observer cannot but note
that in almost every period and in every country it has been
customary to face buildings with a different material from
that which has been used structurally. When one comes
to think of it, this is a reasonable thing to do. As with
the clothing of the body, two purposes are served—one being
the protection of the structure against the elements and the
other the decoration thereof. The pyramids, built of lime-
stone, were cast in granite; the Assyrian monuments had
their walls of sun-dried bricks lined with slabs of alabaster;
and so we might go on, only excepting the buil-
dings of the Greeks and certain early cyclopean works. Generally, it is
HOUSE AND PLANS, M. T. SILVER, CLEVELAND, O.

true that the underlying structure has been indicated exter-

rnally, but more by mass and general form than by the

substance of the outer casing or the method of decorating it.

In these modern days, when our structural skeleton is

commonly composed of a material which it would be im-

practical to expose to the weather—or, if not impractical, at

least unwise (as the engineers are beginning to discover in

connection with many an iron or steel railway bridge)—the

question of the outer clothing is one which is coming into

considerable prominence. It is not so very long since the

extreme purists were calling out for the exposure of steel-

construction, even in the humblest buildings, by consider-

ations of appearance as well as of weather resistance.

It is only in the commonest of sheds and barns that the

same bricks will be employed externally as internally. Even

where common stocks are used they are picked for facings,

while as frequently as not they are chosen for their color,

and a superior description of brick is employed. In the

very lowest class of domestic building—that of the specula-

tive builder, who, in order to make a profit must save every

penny he can upon his construction—it is imperative to

employ different bricks, for the rain would penetrate if he

were to use as an outside casing the soft rubbish which he

is contented with for his internal partitions. Sometimes he

solves this difficulty by giving his exterior an "artistic" ap-

pearance by means of a coating of roughcast. Low down

in the scale as this work often is, there is immediately,

whether bricks or roughcast are employed, an indication that

appearance dictates the choice as much as utility; and there

is certainly no thought of architectural purity.

Color, long neglected by us, is coming to be recognized

as one of the most important considerations in architecture:

necessarily it applies to the facings only, and not to the

hidden material of the structure. Yet in many an office

it is still too much the habit to specify materials without

much thought of color effect. Architecture is not mere

building only, for an architect must of necessity be a colorist

if he is to produce what is in harmony with its surroundings

and beautiful in itself. All the facing materials that are

available constitute his palette, and he can combine them as

he pleases him. His harmonies are necessarily controlled,

however, by the adjective "available," as used in the previous

sentence.

Texture, though much less considered, is more subtle

than, and quite as important as, color: it is more difficult

to represent upon a drawing, by no means so easy to visualise

in advance. Many a good colorist will fail in this respect,

but it is only by harmony of texture and color that a perfect

result can be achieved. Too rough a material also may be

wrongly used, like roughcast in the upper portion of an

ashlar building; but, as a general rule, an over-smooth

material is more difficult to employ satisfactorily than a

somewhat rough one. This is the danger of much of the

glazed taffarel work of the present day. It has its uses, for

it is easily cleansed, it is highly suitable for encasing steel-

work or facing reinforced concrete, it resists the weather

admirably, and apparently it has extraordinary lasting qual-

ities. On the other hand, its smooth surface is hardly smooth

enough to give marblenike effects. Having been produced in

a kiln, the face is never perfectly flat, and the light is

reflected from it as from a badly-made mirror. It is

questionable whether such a material should not be employed

for wide wall spaces and jointed like stonework. Treated

as a large-scale mosaic, and with skillful use of color, there

might be something to be said for it. Mosaic is obviously

out of the question on account of its cost, and a compar-

atively thick external facing of stone would occupy space on

plan which is just that which the employment of reinforced

cement would be aimed at saving for internal use.

CHINESE STUDENTS OF THE TELEPHONE

ART IN THE UNITED STATES.

I T has been a common thing during the last fifteen or

twenty years to hear of the Japanese Government send-

ing students to pursue a course of studies in the colleges

and principal manufacturing establishments in the United

States. That this policy has been fruitful of results, beneficial to the

Japanese as a nation, has been evidenced by their achieve-

ments in recent years—familiar to all students of contem-

poraneous history. Probably owing to the fact that large

bodies move slowly, China had not, until a very short while ago, seen fit to take advantage of these opportunities for those

of her young men who wished to embark upon professional

careers. A new era, however, is dawning in the Celestial

Kingdom.

For some time past, the eyes of the entire civilized

world have been centered upon the political upheavals in

China. In the mass of news concerning those disturbances,

an incident, which will undoubtedly have a bearing upon the

future of the country, is worthy of notice. During the early

part of 1911, the authorities of the Government Technical

College at Shanghai, or Nang Yang University, as it is now

known, feeling the growth of a national telephone system

to be assured, took up with the Western Electric Company's

representative in China the question of sending a number of

the members of the graduating class in Electrical Engineering

to the United States for training in that company's shops.

The necessary arrangements were quickly made and

after graduation in July, 1911, three men, the first ever sent

out by the university for such training, left for America.

They came to Chicago to the Hawthorne plant of the

Western Electric Company, where they will engage in the

practical study of telephony, in the company's course. Fol-

lowing this, they will spend some time with one of the large

operating telephone companies. Upon completion of their

studies, the men will, of course, return to their native land,

where it is expected that they will be of material assistance

in promoting and developing the telephone system of China.
The Jacobean interior here illustrated is merely suggestive of the high character and many possibilities of Cheney Silks for upholstery and drapery uses. The line contains the largest assortment of new weaves and colors that Cheney Brothers have ever offered at one time. Many of these are reproductions of antique fabrics in pure styles, the colors being particularly adapted to the fabric and meeting the present demand for old soft colorings.

These goods may be obtained from your jobber or direct from the manufacturers in the piece or in cut lengths as desired. Customers desiring to represent any of these fabrics in their collection can do so by purchasing from the manufacturers a 1 ½-yard sample, to which will be attached small samples showing the full line of colors produced. Cheney Silks include practically everything made from silk.

CHENEY BROTHERS, Silk Manufacturers, 4th Avenue and 18th Street, New York
The center of population of the United States of America, as located by the census of 1910, has been officially fixed at a point two feet from the wall of the factory building of Showers Brothers Company, of Bloomington, Ind.

This extensive furniture plant is covered with 130,000 sq. ft. of "Target-and-Arrow" tin, used to replace tar-and-gravel roofing, which had given poor results in the past.

The point ascertained by the Government surveyors as the exact center of population, just misses a "Target-and-Arrow" roof by two feet. Census returns of former decades have usually resulted in locating the "center" in some isolated, out-of-the-way place, but these various official centers have always been marked, and have aroused widespread national interest. During the next ten years, while Showers Brothers of Bloomington, are the proud custodians of the center, it will be visited by thousands of patriotic Americans. It has already proven a Mecca for automobile touring parties.

Showers Brothers enjoy the distinction of being the oldest manufacturers of furniture in the United States. Their business was established in 1868, and has remained under one management and ownership ever since. Therefore, when they rebuilt their entire plant in 1910, it was peculiarly appropriate that they should select the oldest make of roofing tin for the new buildings. The materials selected for use in these buildings were required to be of the highest quality throughout. "Target-and-Arrow" roofing tin was chosen as the most satisfactory type of roof that could be obtained at any cost.

"Target-and-Arrow" roofing tin is equally well adapted to any type of building, the only requirement being that a high-grade, reliable roof is wanted. This plate is the old-time specialty of ours, differing widely from other makes of roofing tin.

It is the highest-priced roofing tin on the market, furnished either in our pure open-hearth, or charcoal iron base.

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An association of business men some time ago decided to erect a fine hotel and purchased a site for it for about $250,000. Upon this they proposed to erect, at a cost of a million dollars, a modern structure with a capacity of 400 rooms, 250 rooms being devoted to guest chambers in the beginning. The trouble is that the site is too near a church, a matter that was overlooked when the ground was purchased; indeed, this occurred to no one interested in the enterprise until all the necessary funds had been pledged and the plans drawn.

The owner of the proposed hotel site is Edward M. Waldron, head of the contracting firm of E. M. Waldron & Co. The site is just across the street from the municipal building, at the northeast corner of Broad and Green Streets. On the opposite side of Broad Street is the Third Presbyterian Church. There is less than 200 feet between the nearest points of the two properties.

To exempt the site from the ban of the law and permit the great improvement to be carried into effect a bill is now pending in the New Jersey legislature. By its provisions hotels of 250 rooms or more are excluded from the prohibitory section of the existing law.

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BUILDER
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How to Inspect Barrett Specification Roofs

For the protection of Architects, Engineers, Roofers and owners of buildings we direct attention to the fact that a roof is NOT a Barrett Specification Roof unless the materials are applied as directed in The Barrett Specification, and unless each roll of Tarred Felt and each barrel of Pitch bears the labels, facsimiles of which are shown herewith.

To comply with the Barrett Specification, the materials necessary for each one hundred (100) square feet of completed roof are approximately as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over Boards</td>
<td>Sheathing Paper</td>
<td>108 square feet</td>
</tr>
<tr>
<td></td>
<td>Specification Tarred Felt</td>
<td>80 to 85 lbs</td>
</tr>
<tr>
<td></td>
<td>Specification Pitch</td>
<td>120 to 160 lbs</td>
</tr>
<tr>
<td></td>
<td>Gravel or Slag</td>
<td>400 lbs or 300 lbs</td>
</tr>
<tr>
<td>Over Concrete</td>
<td>Specification Tarred Felt</td>
<td>80 to 85 lbs</td>
</tr>
<tr>
<td></td>
<td>Specification Pitch</td>
<td>180 to 225 lbs</td>
</tr>
<tr>
<td></td>
<td>Gravel or Slag</td>
<td>400 lbs or 300 lbs</td>
</tr>
</tbody>
</table>

In estimating Felt the average weight is practically fifteen (15) pounds per hundred (100) square feet, single thickness, and about ten (10) per cent. additional is required for laps. In estimating Pitch the weather conditions and expertness of the workmen will affect the amount necessary for the moppings and to properly embed Gravel or Slag.

The only practical way of determining that Felt and Pitch have been applied as specified is to cut the roof, and as a protection to the responsible roofing contractor, the National Association Master Gravel & Slag Roofers of America recommend cutting a slit into the roof not less than three (3) feet long at right angles to the way the Felt is laid, before the Gravel or Slag is applied. The cut can be repaired by sticking five (5) thicknesses of Felt over it, and the spot will then be as strong as any part of the roof.

The contract price for a Barrett Specification Roof should not be less than the cost of the materials specified, plus the cost of laying, and a reasonable amount for profit. Thorough inspection of materials and workmanship is recommended.
Consult with us and insure proper conditions being established from the start

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Thompson-Starrett Co., Builders

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