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PLANS OF THE SAME.

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PLANS FOR MUNICIPAL BUILDINGS, OXFORD, ENG.

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The Boston Transcript, which is always interested in any thing concerning the artistic welfare of the city, gently reproaches us for suggesting that there might be no great harm in removing the Museum of Fine-Arts to a different location, perhaps on the Back Bay Park, saying that "the educational nature of this fine collection would be very much reduced in its present quarters, and its original purpose seriously abridged" by taking it to a place so "very much out of the way," and although it agrees with us that Copley Square is "a kind of centre of radiation for all points of the compass," it thinks that this is a good reason for keeping the Museum there, on account of "its convenience to the public," and that, when the Great Railway-station at Dartmouth Street, close by, is completed, "it will be still more accessible to patrons near and remote." As to the fire-risk in its present quarters, it considers that, especially with a supply of sea-water, such as will probably soon be available in Copley Square, the Museum has little to fear, and it thinks that the public interest would not be sacrificed to an alarm that has been "magnified beyond all due proportions.

This states the objection to the change very distinctly, but, if the present location is a reason for removal, the public convenience should not be similarly magnified as a reason against it. That a "centre of radiation" for traffic is necessarily a good place for a museum of fine-arts is a very questionable proposition, and the completion of the Dartmouth Street railway-stations is likely to be a doubtful advantage for the display of the fine-arts in their neighborhood. Certainly, the Trustees, if they were choosing a fresh site for their building, would not be likely to prefer the immediate vicinity of a railway-station, and it is very doubtful whether they would select the "centre of radiation" for a dozen lines of electric-cars, notwithstanding the possible increase in the number of their "patrons" which might be derived from the multitude of shoppers who would find the galleries a convenient place for meeting or resting. It is related that the officials of the British Museum once had to issue a public notice, begging those of their "patrons" who utilized their rooms as a place in which to gossip and eat lunch not to drop their chicken-bones through the registers in the floor upon the heating-pipes, on account of the risk of the pipes carrying the latter to the frames of the pictures, must form a high idea of the generosity of owners, who are willing to expose their property to a deterioration evidently so rapid; and an atmosphere which is bad for gilt frames is equally, though less rapidly, fatal to paintings. The people of Boston are famous for their conservatism, and the fact that the Art Museum is now on Copley Square is, to most of them, a good reason for keeping it there; but there are also good reasons for having it somewhere else, independent of the risk from fires, which, it must be remembered, even with a supply of sea-water at hand, might result, if the Pierce Building, or the roof of the Dartmouth Street stations, or of the Irvington-Street Armory, should be burned, in the ruin, by smoke and salt-water, of property which no insurance could replace.

The curious accident which occurred on the Brooklyn Bridge last summer has only just been adequately explained. On one of the warmest evenings of the hot month of July a dray-horse dropped dead from heat, some two hundred feet out from the Brooklyn side, on the main span of the bridge. This catastrophe checked traffic completely for a time, and the teams and cars, continually arriving and stopping, covered the bridge from the obstruction to the New York tower, loading this portion, as it is estimated, to about three times the normal amount, while the space between the dead horse and the Brooklyn tower had probably less than the normal load. While the crowds were as always on the elevated bridge, a curious noise was heard, and the roadway moved and settled. After the bridge was cleared an examination was made, and it was found that four of the great cables carrying the weight of the structure were buckling the channels of the lower chord, but that the structure was kept from falling by the stay-ropes. The buckling itself needed, however, to be explained, and Mr. Collingwood, an engineer of repute, has made an interesting study of the whole affair, for the Railroad Gazette. Our readers will easily surmise that Mr. Collingwood finds a sufficient explanation for the accident in the unequal strain of the unbalanced combination of an unusual load, and abnormal expansion due to the heat of the air. It is calculated that the length of the great cables must have been so much increased by the heat as
to allow the middle of the bridge to drop more than thirteen inches from its ordinary position. As the roadway is supported partly from the cables, by vertical stays, and partly from the towers, by independent diagonal stays, some of which are of iron, and others, of which are of steel, fixed to the top of the towers, while others slide over them, it is evi-
dent that, as expansion would affect these members unequally, some of which would be strained to excess, while others would be relieved of their load. The irregular tension in the stays would naturally cause unequal strains in the trusses supported by them, which might be expected, if they became too severe, to show themselves by failure of the chords. It is probable that the great engineer who designed the bridge foresaw the danger that might come from unequal expansion, for his suc-
cessors have protested against the manner in which it is now used, and the designer of the Hudson River bridge is under-
stood to have adopted a different method of supporting the
roadway. With a knowledge of the cause of the trouble, the future safety of the bridge against such accidents will undoubt-
edly be provided for; but the building world generally will find much interest in this remarkable illustration of the effect
of unequal strains caused by expansion.

THE opening of the Cernuschi Museum of Japanese and
Oriental art in Paris, which has just taken place, furnishes
Mr. Charles Lucas with an occasion for an interesting
notice of it and its founder, in _La Construction Moderne_.
Cernuschi is principally known in this country as the most en-
lightened and influential of all the advocates of a bimetallic
standard of currency, but his original ideas as a financier were
among the least of those by which he merited distinction. He
was an Italian, as his name indicates, and was born in Milan;
but the energies dispelled which, as a young man, before the
revolution of 1848, he manifested in regard to the tyranny
of Austria and the Pope, led to his expatriation; and he settled
in Paris, where most of his subsequent life was spent. Even here
in his later years, in his wire fence with its metal bars, and its
political subjects, and, just before the war of 1870-71, he was expelled
from France, in consequence of having given practical expres-
sion to his ideas by the anti-plebiscite movement. The result was
one hundred thousand francs to the "Anti-plebiscite Com-
mitee." In a few months, imperialism had ceased to exist,
and he returned to his home, only to find himself the object of
the suspicions at once of the Commune and the Versailles
army, both of whom meditated shooting him; but circumstances
rescued him from each danger in turn, and the restoration of
peace and quiet in the country found him, although still a
liberal of advanced ideas, a citizen beloved and respected by
all parties. His foresight as a financier had already made him very
rich, and, in 1871, while France was still suffering from the
agitation which had nearly proved fatal to himself, he
thought it advisable to make a long journey to the East, ac-
accompanied by M. Theodore Duret. The Japanese civil
war was just over, and, in the social disturbance which followed
the dethronement of the Tycoon, great numbers of works of
art, particularly those belonging to the convents attached to
the Buddhist temples, had come upon the market. M. Duret
was already a good judge of Oriental art, and M. Cernuschi,
with the aid of his friend's advice, spent large sums in buying
the best things that could be found. Returning to Paris
in 1872, he bought a lot in what is still, to our mind, the most
charming location for residence in the city, at the corner of the
avenues of Villers and Vaugirard, and there, in a beautiful
house, with galleries expressly arranged for showing his
collections. This house, designed by M. Bouwens van der
Byen, a pupil of Labrouste and Vaudoyer, gained the Grand
Medal awarded by the Société Centrale for private architect-
ture. The distinguished owner was always liberal in opening
his house to persons interested in his collections, and, at his
death, in 1896, bequeathed the whole to the City of Paris.
Some slight changes have been made in the arrangement, and
cases prepared for the collections, so that it was not until the
present month that the definite opening of the Museum could
take place.

MADAME MAILLOT, a daughter of the great French
architect, Félix Duban, has presented to the Académie
des Beaux Arts fifty thousand francs, the interest from
which is to be given every year as a prize to the winner of
the Prize of Rome for that year, on condition of his faithful fulfi-
ment of the duty of preparing, during his stay at the Villa
Medici, a scheme for the restoration of some ancient work. If
the candidate fails in this, the money is to go to the student
who came nearest to performing this duty. It seems, however,
a little strange that a woman should take an interest in a ques-
tion of architectural education so vexed as that of the advan-
ces which have been made in the general restoration of ancient monuments, and an architect's daughter, with us, would be no more likely than an
any one else to concern herself about the subject; but the fine-arts
in France are matters of conscience, and there are many women
who have sufficient knowledge to appreciate a work in artistic controversies, and to do what they can to promote the
cause which they favor.

PASSING notice may be given to the death of John W.
Keely, the author of the renowned "Keely Motor," on
which large sums of money have been spent, without, so
far as can be ascertained, producing any practical result. Although we
have ourselves never had the slightest faith in the idea that a
new force had been discovered by Mr. Keely, it is fair to say
that a great many highly intelligent people have believed in
his invention, and it is charitable to credit the assertion of his
biographers, that he himself also believed in it. Some months
ago he appeared in America, and met Mr. Keely, who had
provided him with a comfortable living, for nearly thirty
years, prevailed upon him to promise that he would reveal his
secrets to the world, and Keely's son, who has now the
fortune to be Keely's heir, has consented to such a disclosure,
but the secret may be a very important one, and the truths
which it might not die with. It is understood that the promise has
been kept, and the legal settlement of his estate will undoubtedly
bring to light whatever there may have been of reality in his
discovery, and, in 1871, while France was still suffering from the
agitation which had nearly proved fatal to himself, he
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Some slight changes have been made in the arrangement, and
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take place.
ARCHITECTURAL ACOUSTICS.

The acoustical problem by which the architect of an auditorium or music hall is presented is, in every case, the greatest in difficulty among all the details of the problem. The chief reason is found in the necessity for covering the greatest loudness, throughout the hall, of a sound produced by some chosen place, proportional loudness of all component notes, and the greatest uniformity in the intensity of the sound as it travels from place to place. These two requirements are not always necessary, as they are the entirely sufficient, conditions for good bearing. Each, however, can be secured only at the partial expense of the other, and this is the solution of the problem, even though it is essentially a compromise. Moreover, it is a compromise that must be met dif- ferently according as the hall is to be used for speaking or for music, and if for music differently for different kinds. It is in the solution of this problem that I hope to be of service.

The simplest auditorium is, of course, the open air. In this case, however, the sound diminishes rapidly in intensity as it spreads uninter- ruptedly in all directions. The only way to increase the intensity of the sound otherwise lost in that direction. A ceiling overhead, side- walls and rear of the hall would reflect the sound back to the audience behind the speaker would reflect to the audience the portion of the sound otherwise lost in that direction. A ceiling overhead, side- walls and rear of the hall would reflect the sound back to the audience. In fact, however, walls, though good, are not perfect reflectors, and there is more or less loss. Moreover, the sound that enters the gallery, having travelled farther and the walls, and so incline the ceiling as to reflect the sound re-enforcing it. It is desirable, therefore, to so shape the room, so turn the walls, and so incline the ceiling as to reflect the sound otherwise lost in that direction. A ceiling overhead, side-walls, and rear of the hall would reflect the sound back to the audience, in fact, however, walls, though good, are not perfect reflectors, and there is more or less loss.

In considering any special case it is to be borne in mind that the sound coming directly from the speaker is diminished in intensity not merely on account of the distance but also from absorption by the garments of the audience over which it passes. Therefore, if the period of the original sound wave is long, the further away the farther the sound will have to travel, the weaker it will be. If the period of the original sound wave is short, the further away the farther the sound will have to travel, the weaker it will be.

In the room where a musical instrument is played in the gallery the audience over which it passes. Therefore, if the period of the original sound wave is long, the further away the farther the sound will have to travel, the weaker it will be. If the period of the original sound wave is short, the further away the farther the sound will have to travel, the weaker it will be.

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or a woman coming into the room, and to detect, though with considerable difficulty, even a slight difference and by a change in the clothes of the observer. Thus failure to record the clothing worn in a certain series of experiments made it necessary to discard over 3,000 observations. In a large auditorium, of course, such small differences could not be noticed, but the method was one of remarkable accuracy. It was also very convenient in its results, provided the experiments were undisturbed by outside noises. Proper conditions could be secured only at night between twelve and four o'clock, and all the experiments were performed at that time.

Considerable additional accuracy is gained by taking the average of a large number of observations in each case instead of relying upon a single one. This method in the hands of different observers gives almost identical results, provided they practice sufficiently and are not of abnormal hearing. Three gentlemen have devoted the necessary time to test this point. Different experiments have been carried on in the following rooms belonging to the University: the large lecture-room above referred to, two rooms in the physical laboratory, of which one is the Constant-temperature Room, Saunders Theatre, Apollo Hall, and four rooms in University Hall, including the Faculty Room; also Steinert Hall in Boston, devoted to concerts, and the First Parish Church in Brighton.

The relative absorbing power of various substances was tested in the following manner: Having determined the duration of the residual sound in some room when entirely empty, a small amount of some standard substance was brought into the room and the duration of the residual sound was again determined. This was repeated as more and more of the substance was brought in. The results were then plotted on co-ordinate paper, giving what might perhaps be called a calibration curve of the room. For example, in the lecture-room, whose plan of elevation is shown in the first diagram, the duration of the sound was 5.67 seconds. Hair-cushions of high grade, obtained from Sanders Theatre, were tried, with the comparative results given in the table.

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The American Architect and Building News, November 26, 1898.

most active absorbent factor in a room. This will also make the loudness a maximum. In order that the hall may remain good when the audience only partly fills the hall, it should be provided with entrances and exits at various points, or with ample natural ventilation. When the residual sound should be a minimum in a room devoted to speaking, to military music, perhaps also to orchestral music, it probably should not be a minimum in a room designed for chamber-concerts, and especially if designed for piano-music. In the latter case the audience may attain, and is generally also to exceed, an audibility of the instrument, and to diminish its staccato effect. A suggestive incident occurred in the recent investigation conducted by the Department of Music of the University to determine whether a certain room was suitable for a series of chamber-concerts to be given in connection with one of its courses. The test, by a very select audience of experts, was made with piano-music, and was conducted under such conditions -- size of audience, etc. -- that the duration of the residual sound was 2.3 seconds. The room was pronounced satisfactory. On the whole, however, this use of the auditorium as a contributor to the aesthetic value of the musical production, rather than as a vehicle of exact transmission, is a too serious complication of the problem.

The preceding suggestions have been on the supposition that the architect could control his design by acoustical considerations alone. This is, of course, not the case. The artistic appearance of the hall, adherence to conventional forms -- as a lofty ceiling in a church, adequate and pleasing lighting by day and by night, adequate and uniform ventilation -- all make demands as time incompatible with acoustically ideal conditions. A hall having proved faulty under trial, it may become necessary to diagnose the case and prescribe treatment. There is in such a condition, there is a simple treatment -- as a lofty ceiling in a church, or not -- a room fen- 

cuts off too much light and air.

the question of cost of preservation or ability shown in making the residence fit for the families of place in the solution of such a problem. Halftimbered work, roofs treated so picturesquely as to practically destroy a good part of the room-space of the second story, double gables so arranged as to exclude too much of the morning sun, and to prevent too early entrance of the afternoon rays, were among the characteristics of Mr. Sturgis's design. The enclosed fire-escapes or secondary staircases are an excellent practical feature.

The conveniences of various plants in common, such as laundries, kitchens, heating, etc., and also the scheme of suitable shop-space as shown in some of the designs and not in others have not influenced the jury in making a comparison.

Another type, which was represented by Mr. Preston, proposed a central corridor connecting continuously through the houses with buildings the tenements opened. This corridor was closed at regular intervals by fireproof doors. Mr. Preston claimed that this plan gave the greatest safety in case of fire, and it also might be a little less expensive to build, on account of the fewer entrances and stairways. But such a plan did not compare favorably with the others we have referred to, in giving a little more of the privacy of a separate dwelling, which was felt to be of the highest importance, and the danger from fire could well be met by proper fireproofing of the buildings, and that was more dreary and unhomelike than these long corridors. The other designs were variations of the types already referred to, but failed on account of complications in the planning or the defects in the design, such as the want of adequate and pleasing lighting by day and by night, and the effect of the residual sound is to increase the fulness of tone and the uniform ventilation — all make demands at times incompatible with the greater distances. Obviously the treatment should not be the same. There is such a room belonging to the University, known locally as Sever 35. It is low and long. Its private corridor with water-closet opening from it, rather than from a living-room, is a very attractive feature, but the arrangement of plan and the treatment of the elevation lacked the attractiveness of other designs. Mr. Longfellow's exterior simply filled with windows was an example of architectural treatment. That architectural effect is an in- 

In the open competition for the housing of fifty artisan families in the suburbs of a city there were twenty-nine competitors, of whom nine were from Boston, eight from New York, three from Philadelphia, two from St. Louis and one each from Baltimore, Brooklyn, Cambridge, Chicago, Cincinnati, Milwaukee and York, Pennsylvania.

For the occupancy of the land by the buildings, in this competition, as in the limited, two schemes were represented: one in which the houses were isolated, planned for one, two, three and four families, and the other in which the block system was used. The material of construction was brick, half-timbered brick, brick with roughcast, and were employed either alone or in combination.

Most of the designs were interesting in one way or another, but the most practical and suitable were those of Mr. Longfellow and Messrs. Peabody & Stearns.

Many of the plans adopting the block system were very attractive, only slightly at best, the latter can be improved by the use of reflectors. The lecture-room referred to above may be one of the best instances of covering more land with buildings than the tenements opened. This corridor was closed at regular intervals by fireproof doors. Mr. Preston claimed that this plan gave the greatest safety in case of fire, and it also might be a little less expensive to build, on account of the fewer entrances and stairways. But such a plan did not compare favorably with the others we have referred to, in giving a little more of the privacy of a separate dwelling, which was felt to be of the highest importance, and the danger from fire could well be met by proper fireproofing of the buildings, and that was more dreary and unhomelike than these long corridors. The other designs were variations of the types already referred to, but failed on account of complications in the planning or the defects in the design, such as the want of adequate and pleasing lighting by day and by night, and the effect of the residual sound is to increase the fulness of tone and the uniform ventilation — all make demands at times incompatible with the greater distances. Obviously the treatment should not be the same. There is such a room belonging to the University, known locally as Sever 35. It is low and long. Its private corridor with water-closet opening from it, rather than from a living-room, is a very attractive feature, but the arrangement of plan and the treatment of the elevation lacked the attractiveness of other designs. Mr. Longfellow's exterior simply filled with windows was an example of architectural treatment. That architectural effect is an in- 

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far from his daily work. The jury decided that the "semi-detached," or double, house should be the accepted basis of any scheme of build-
ing such as here proposed as affording the maximum of privacy with the minimum of cost.

The wide range of estimates of construction gave as wide a range in the net income on the investment, but a careful reduction to the same basis showed that it would be economical to promise between 4 per cent and 5 per cent income, although 6 per cent and over was promised in some cases.

The prize in this competition is awarded to the firm of Messrs. George E. Barton & George G. Will, of Boston.

The ground is very attractively laid out, so that a pleasing com-
position is obtained in the relation of the houses to one another, the
planning of each house is good and economical and the exteriors of
the buildings are charmingly designed. The scheme as a whole is a
first-rate example of a very attractive fitness to the end in view. It
is sincerely to be hoped that many of the designs may be published, as
in nearly all there are individual good points deserving careful con-
sideration.

The problem is a very interesting one and the serioushness in
its consideration by every competitor fully proves the wisdom of
your paper in choosing such a field in fulfilling the mission of
the Shattuck fund. Very truly yours,

(Signed) F. W. CHANDLER,
H. LANDORD WAREN,
JOHN M. CAREY.

PRIZE-WINNING DESIGN FOR "SHATTUCK PRIZE" FOR ARTISANS' HOMES. [OPEN COMPETITION.] SUBMITTED BY MRS. GEORGE S.
DREW, JR., ARCHITECT, NEW YORK, N. Y.: TWO PLATES.

[Issued with the International and Imperial Editions only.]

<table>
<thead>
<tr>
<th>EXHIBITED PLANS.</th>
<th>COST OF CONSTRUCTION.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> 10 dwellings each at $6.25 per month</td>
<td>$725</td>
</tr>
<tr>
<td><strong>2</strong> 4 buildings each at $7.50 per month</td>
<td>$300</td>
</tr>
<tr>
<td><strong>3</strong> 1 building at $11.00 per month</td>
<td>$516</td>
</tr>
<tr>
<td><strong>4</strong> 4 houses at $12.00 per month</td>
<td>$612</td>
</tr>
<tr>
<td><strong>5</strong> 4 shops (corner) at $15.00 per month</td>
<td>$708</td>
</tr>
<tr>
<td><strong>6</strong> 6 shops at $18.00 per month</td>
<td>$900</td>
</tr>
</tbody>
</table>

Total income: $7,900

Taxes, insurance, etc., 1,400
Superintendent's wages, 600
Assistant's wages, 220
Paving and sidewalks, 780
Possible repairs, 400
Total annual expenses, $3,500

Cost of land at 12 cents per sq. ft. 93,138
" Sewerage and water-supply systems. 1,500
" Grading streets and sidewalks. 124
" 12 buildings containing 1,300 sq. ft. and 30,000 cubic ft. each, @ 8h cents per cubic ft. 10,300
" 2 buildings containing 900 sq. ft. and 23,000 cubic ft. each, at 8h cents per cubic ft. 4,800
" 2 buildings containing 2,600 sq. ft. and 60,000 cubic ft. each, at 8h cents per cubic ft. 10,300
" 4 buildings containing 2,105 sq. ft. and 62,120 cubic ft. each, at 8h cents per cubic ft. 21,129

Total cost: $98,000

The author has not deemed it advisable to introduce into the
scheme mentioning the conveniences as steam-heat, electric-light and
fuel-gas, the undertaking being on too small a scale and the area of
distribution too large to permit of their being managed economically in
their development. Space has been, however, reserved in the "Common
Green" for the future erection of such plants should the conditions be
favorable. It is suggested, however, that by a small sacrifice in the space
devoted to shops, free baths and reading-room could be provided
without reducing the net income below 4 per cent on the capital
invested.

PLANS OF THE SAME.

The lighting of streets will (as we pay taxes) be borne by the
city, and whatever luminant is there used we can have introduced
optional with tenant, who will, however, probably use oil.
We have chosen a system combining all the advantages of both
materials, constant damage and care reducing the income year by year.
It has been upon such plans that we have based our estimates.

The buildings are designed in imitation of the picturesque half-
timbered houses still common in England: the cellar and first story
walls are of brick, while the upper walls are of the ordinary frame-
construction covered externally with metal lath and plastered with
plastered wood, thus rendering them warm, substantial, and, in a large
measure, fireproof. The roofs are slate. The interior finish com-
prises hardwood floors, whitewood trim, and good substantial hard-
ware, the woodwork being painted or stained.

The cost has been carefully estimated, using the present prices of
labor and material in the vicinity of New York as a basis, and
amounted to 83 cents per cubic foot, or to from $3.125 to $3.44 per
square foot.
roof (making a windproof box), and then veneering the walls with 4 inches of brick anchored into boarding. The roof being slate, this makes a construction externally fireproof. The brick protects from two sides of a room and in many cases on three sides. A large combination back porch and veranda allows the removal of cooking in summer months out of the living-rooms.

These estimates have been given with the understanding that all work would be done at the same time, and we have found that discounts for the fifty houses have in some cases reached 25 and 40 per cent.

Total income from rents $8,300

Yearly expenses——

Tax on 60 per cent cost of houses and land........ $1,079
Water, $10 a house, 4 stores, and $25 for park........ 565
Insurance at 10 cents a $100 (5-year rate) on 60 per cent houses’ cost........ 63
Ages, 10 per cent of rents.......................... 835
Closet-man ......... 480
Repairs, 5 per cent of rent.......................... 418
Loss of rent, 10 per cent of rents.................... 825

Profit on investment (5.00 per cent)................... $8,157

ESTIMATE OF COST OF ONE HOUSE.

155 yards stucco, at 36 cents................. $46
48 perch stones, at $4.00................. 192
16 M. brick, laid, at $14.50.............. 232
1,500 dimension sarsenite................. 175
5000 matched sarsenite boards and 1,200 square edged for house.... 125
10 windows set and finished....................... 128
Front and back doors complete 90, 10 inside $90.............. 188
225 H. P. floor, put down 812 squares............ 27
1,987 N. C. floors............. 147
100 shingles 165
200 base 8x10’ shelving 95, 2 cases drawers $16.............. 60
Miscellaneous, carpenters’ labor...................... 130
508 yds. plaster (2 cents, outside plaster, 1 cent, brickwork)...... 145
Paper, hardware and nails.......................... 100
10 squares of glass (a 12” scrap cutting) at $0.60.............. 6
3 cellar windows.............................. 9
Outside finish, gutters, peaks, eves, etc.............. 65
Front and cellar stairs........................... 65
Front porch and steps 286, linoleum doors $60.............. 145
2 galvanized-iron conduits, set.............. 8
Concreting outside 15
4 pr. blinds.................................. 120
Flushing................................... 150
Painting..................................... 130
Kitchen-range......................... 15
Furnace (18” pot) set complete................... 30

House (Type A) 700 sq. ft. at $3.15.............. $2,308
at 17,500 cubic ft. at $0.126.................. 2,308

LAND AND IMPROVEMENTS.

174,340 sq. ft. land at 15 cents........... $29,136.00
45,000 “ “ taken out for parks, roads, etc............. 90
119,340 “ “ “ “ “ divided into lots.................. 119,340

COST OF IMPROVEMENTS. 

Surveyor. $100
Scorer. 125
Road light. 1,350
Sidewalk — rolled-stone.......................... 500
Park and planting on sidewalks.................. 200
Fencing. 2,000

5,250.00

Total cost of land and improvements........... $31,386.00
Dividing by 129,240 (land divided into lots) we get cost per ft. of improved land.. $0.242
50,000 (area of houses) x $0.15 (price per ft.)........ 7,500.00
842,000 (cubic ft.) x $0.126 (price per ft.).... 106,098.30

$137,484.30

Showing a discrepancy, which we have not time to investigate, of........ 24.92

SCHEDULE OF HOUSES AND RENTS. 

2 stores $20
12 houses $12
17
15
12
12
10
8
14
8

$3,024.00 $2,048.00 91.52 3,515.52
$3,024.00 491.52 3,515.52
$2,775.00 2,048.00 91.52 3,378.52
$3,024.00 2,048.00 91.52 3,515.52
$2,775.00 2,048.00 91.52 3,378.52
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$2,775.00 2,048.00 91.52 3,378.52
$2,775.00 2,048.00 91.52 3,378.52

$4,000 sq. ft.

$8,300

$137,308.32

* $137,308.32

ADD $3.00 for car-fare.
The American Architect and Building News.

The GARDENER'S HOUSE, NIEDERRAD, PRUSSIA.

The dwelling-houses. Each house has a separate plot of ground.

The blocks are well segregated, and every house has an agreeable prospect: each house has a separate plot of ground.

The plan offers ample facilities for running sewers, drains, water and gas pipes, and electric wires, and for connecting each house therewith.

**COMPETITIVE DESIGN FOR "SHATTUCK PRIZE" FOR ARTSMAN'S HOMES.** [OPEN COMPETITION.] SUBMITTED BY MR. CHARLES L. BILLMAN, ARCHITECT, PHILADELPHIA, PA.

It is deemed best that the scheme herewith presented be restricted to dwelling-houses. Places of entertainment and shops for the sale of food and other supplies are better situated at some distance from the dwelling-houses.

The houses are in blocks, for economy of erection and maintenance. The blocks are well segregated, and every house has an agreeable prospect: each house has a separate plot of ground.

**MATERIALS.**

Foundation-walls, rubble-masonry.

Walls of superstructure, hard red bricks, face-work to be relieved with some dark headers, and trimmed sparingly with light-colored stone.

Roof-covering, green slates.

Joists and doors, wood.

Partitions, 2-inch-thick planks, set vertically and plastered both sides.

Interior joinery, yellow-pine.

 Heating, by means of individual warm-air furnaces.

Joists and floors, part of Sorese sos 00d cuces sev dvetsreowrwsstieverwnsesrew $26,136.00

Fence, paving, draining, Ctc.......scccccccscccccccccsecs 10,000.00

Annual rental at $300 per house (average) o ececessees $15,000.00

Total investment............++ Sonveseecsceoee $193,058.50

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**PLANS OF THE SAME.**

"EASTCOTE," PINNER, ENG. MR. W. HOWARD SETH-SMITH, ARCHITECT.

PROPOSED METHODIST CHURCH, WEXSTON-SUPER-MARE, ENG. MR. H. DARE BRYAN, ARCHITECT.

DESIGN FOR MUNICIPAL BUILDINGS, OXFORD, ENG. MR. G. W. WEBB, ARCHITECT.

ST. GEORGE'S CHURCH, STOCKPORT, ENG. MESSRS. AUSTIN & PALEY, ARCHITECTS.

FOURGERY EXTRAORDINARY.—The extraordinary story of forgery and fraud which the treasury counsel, Mr. Beldin, unfolded at Bow Street Police-Court some days ago was resumed recently, when the accused, Herbert Davies, aged twenty-five, described as "a private surgeon," residing at Castleman Gardens, Barnes, was brought up on remand to hear the evidence. He is alleged to have duped Lieutenant- Colonel Shipway of Grove House, Chiswick, by pretending to trade for him an important pedigree and coat-of-arms through ancient patent registers and church effigies, over a few years. The story has been thus far by the prosecution, may be briefly summarized: He is accused of having forged Shipway family entries into the registers of the parish of St. Mary Magdalen to Gloucester. The prosecution is now to give support to the coat-of-arms which he invented for the colonel—a lion rampant, holding a weapon. Upon one of the bases of the oak chest which contained the patent documents he is said to have had an entry engraved to pretend that the chest was a gift from a deceased Shipway. Collins are said to have been examined by him at Magdovield Church, and upon one leading coffin he is alleged to have forged the name "Shipway," to pretend that the skeleton inside was that of an influential ancestor of the colonel. Entries were also carved in the belfry to give corroboration to the coat-of-arms. The church organ he is said to have taken down as so as to tamper with effigies and carve Shipway inscriptions. Willis are alleged to have been stolen by him and obliterated, and false Shipway wills forged upon the parch- ment, these forgeries being again inserted among old diocesan registers of Gloucester and Worcester. Having "discovered" all these things he communicated them to the colonel as genuine relics. — London Mail.

The Pyramids of Napata.—"The opportunity for making an excursion to the Pyramids of Napata presented itself recently," writes the London Graphic's artist correspondent from the Sudan, "and I eagerly embraced the chance of visiting these interesting and little-known relics of the Black Pharaohs. They are pyramid-like structures on the west side of Gebel Barkal Mountain, a huge mass of sandstone rock which rises more than 2,000 feet above the desert; as Gibraltar rises from the sea. This mountain, though of no great height, is a landmark for many a mile round, and from Mount Meroe camp the pyramids themselves are plainly visible above the belt of palm-trees on the opposite bank of the Nile. These pyramids are six in number, and, with one exception, all are in a wonderfully perfect state of preservation. None of them, however, is of any such vast dimensions as the pyramids at Gizeh; the highest one being not exceeding sixty feet. They appear to have been built in groups of three, placed at right angles to one another. The stones are so accurately facing in no case more than these three feet long by one and one-half feet in height, and are not very closely fitted one another. These pyramids have never been explored. What varied treasures may they not contain! What priceless inscriptions may adorn the walls of their sepulchral chambers! The temple which we first approached on leaving the pyramids is hewn out of the solid rock. It contains three chambers, the central one being the largest, with the others on either side of it. In every case, however, the exteriors are richly decorated with hieroglyphics, and in some places the original colors. The other is a lady artist of some celebrity, who has for years exhibited annually in London. The public are not aware that she has been taken down so as to tamper with effigies and carve Shipway inscriptions. Willis are alleged to have been stolen by him and obliterated, and false Shipway wills forged upon the parchment, these forgeries being again inserted among old diocesan registers of Gloucester and Worcester. Having "discovered" all these things he communicated them to the colonel as genuine relics. — London Mail.

Color-blind Painters.—To speak of a color-blind artist sounds like joking, said a noted critic; but, strange as it seems, there are several persons so affected who can nevertheless paint extremely well. Numbers of color-blind people there are, of course, who draw perfectly in pencil, ink and crayons, but I myself know a scene-painter attached to a provincial theatre who, though "color-blind," paints all its scenery, and has quite a local name, not only for his "interiors" and oak cham- ber doors but even for landscapes. I can tell you also of two London ladies who could not only draw, but were color-blindness who painted really beautiful pictures. One is the daughter of a late famous artist, and was taught painting by her father. She is quite unable to distinguish between green, but her colors are labelled with the names, and she has been taught to mix the certain effects. Possibly her eyes are somewhat seared to her eyes, as it were, drawing with a brush and "shading" with the colors. The other is a lady artist of some celebrity, who has for years exhibited annually in London. The public are not aware that she has been taken down so as to tamper with effigies and carve Shipway inscriptions. Willis are alleged to have been stolen by him and obliterated, and false Shipway wills forged upon the parchment, these forgeries being again inserted among old diocesan registers of Gloucester and Worcester. Having "discovered" all these things he communicated them to the colonel as genuine relics. — London Mail.

The Growth of Electrical Industries.—The last report of the Commissioner of Patents gives some historical notes on the influence of patented inventions in the creation of electrical industries. The manu- facture of electrical apparatus and supplies began to be of importance shortly after 1850, and in that year 1,211 people were employed in 78 establishments, producing an output valued at $82,000,000. In ten years the number of persons employed has risen to 10,114,714, engaged the labor of 9,485 persons in 1890. Since 1890 the increase in the in- dustry has been proportionately large. The exports of "instruments and apparatus for scientific purposes, including telegraph, telephone and other electrical appliances," amounted in value in 1897 to $3,085,-000, having increased to this amount from $88,385 in 1880 and $1,420,765 in 1890. In 1890 there were but three electric-light and power- stations and plants in the United States to-day is estimated at over $600,000,000. The year 1880 also marks the commercial advent of telephony. At the close of 1896 there were in this country 967 tele- phone exchanges and 832 branch offices, using (830,984 miles of wire and equipment. The total output of the industry in 1895 and 1896, according to the Census of Manufactures, was estimated at nearly $100,000,000. — Boston Transcript.
DRAWINGS FOR THE
SHATTUCK PRIZE FOR COMPETITIVE DESIGNS FOR ARTISANS.
BOSTON, MASS.

ELEVATION ON

SECTION SHOWING CENTRAL WALL CONSTRUCTION

GEORGE EDWARD BARTON AND GEORGE G. WILLIAMS

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DESIGNS FOR ARTISANS' HOMES (OPEN COMPETITION).

WILL, ARCHITECTS, 19 EXCHANGE PLACE, BOSTON, MASS.

PRIZE-WINNING DESIGN.

OR THE SHATTUCK PRIZE

ARCHITECTURAL DESIGNS

FOR ARTISANS' HOMES

COMPETITION.

WILL, ARCHITECTS, 19 EXCHANGE PLACE, BOSTON, MASS.

DESIGNS FOR ARTISANS' HOMES (OPEN COMPETITION).

WILL, ARCHITECTS, 19 EXCHANGE PLACE, BOSTON, MASS.

PRIZE-WINNING DESIGN.
SHATTUCK PRIZE FOR COMPETITIVE DESIGNS FOR

GEORGE EDWARD BARTON AND GEORGE G. WILL, ARCH.
WILL, ARCHITECTS, 19 EXCHANGE PLACE, BOSTON, MASS.

WINNING DESIGN.
SHATTUCK PRIZE FOR COMPETITIVE DESIGNS FOR ARTISANS' HOMES (OPEN COMPETITION).

First Floor Plan.

Second Floor Plan.

Third Floor Plan.

Exhibit Plan.