

# SKYSCRAPERS WILL BE EVEN HIGHER

## Predicted that 1,000 Feet will be Reached by Year 1950.

(By David H. Ray, Chief Engineer Bureau of Buildings, 1910-11-12, in New York Herald.)

A French engineer, a visiting member of the recent international congress of engineers, viewing New York from the 55th floor of the Woolwich building, 865 feet above the rock foundation, said, "To the Seven Wonders of the World, you Yankees will soon add an eighth, the 1,000 foot building." And a Yankee engineer said, "We surely can, no doubt we shall."

Curiously enough the Seven Wonders of the ancients were all works of engineering.

1. The walls and gardens of Babylon.
2. The Pharos and harbor works of Alexandria.
3. The pyramids of Egypt.
4. The temple and statue of Zeus at Athens.
5. The Colossus of Rhodes.
6. The mausoleum of Halicarnassus.
7. The Temple of Artemis at Ephesus.

The first two are now but a clay mound, a rocky reef and a memory. Only the third still compels the admiration of the world. The Egyptian pyramids the tallest, that of Cheops, measures but 450 feet, about one-half of the height from which the French engineer looked down not on "fifty centuries" but two centuries of civilization. Two hundred years ago the lower end of Manhattan island presented to the view a few hundred huts, barns and cottages on a shady, marshy ridge of rock, the tallest structure not over 50 feet high.

At the present time the annual expenditure for engineering in the amount of New York is equal to that of all the rest of the world combined. The most striking evidence of this wealth and volume of engineering industry is the skyscraper. Building once a trade, ever higher. During the single year 1911, fourteen skyscrapers of sixteen stories or higher were projected at an average cost of \$1,500,000. In the five years 1906-11 about 60 buildings of 15 stories or more were designed, costing a total of about \$70,000,000.

The official building statistics of Greater New York show an expenditure of over a billion dollars on building construction in the past five years. A dozen skyscrapers a year is the present pace in New York, meaning by a skyscraper a building at least 10 stories high, for nothing less is now able to show its silhouette against the sky in lower New York and merit the title of skyscraper.

The tall building has been explained as a scientific evolution, as a product of economic stress and scarcity of land. It has been admired, scoffed at, been justified and condemned. It has been likened to the castle of the robber baron. But I am not aware that it has been recognized for what it is and will be to posterity, namely, the material expression and record of the American individualism, ambitious, assertive, successful.

Just as the Egyptian left his mark, signed his name and gave his impress, his character to posterity in the pyramid, so is the American character and civilization symbolized in the skyscraper building. Seventy-five pyramids testify to the life of ancient Egypt, despotic, impassive, calm; and 75 rivals to the Woolwich building will arise to testify to the American individualism, ambitious, assertive, successful.

Following for a few moments the material evolution of the American tall building we note that the practical limit of height in brick and masonry construction was reached about 1870 in New York when walls and piers became so thick as seriously to reduce the light by reason of the thickness of the masonry. Previous to this time the records of the building department show but few buildings over eight stories in height. The heavy walls and piers encouraged architects to use the traditional Roman and Romanesque styles, and it was a generation before the evolution of light, strong steel construction shook off this incubus of clumsy rock studded with thick architectural forms.

In 1880 two nine story buildings were erected, costing \$525,000. In 1881 with the development and application of elevator service and the introduction of iron and later steel beams the record shows two ten story buildings and four nine story buildings. In 1882 an eleven story building was attempted. The thirteen story building did not arrive until 1889—the Pulitzer Building, 188 feet high, the first \$1,000,000 structure, and designed to be fireproof, as the term was then understood.

In 1891 a life insurance company projected a fifteen story building of skeleton construction, and the limit of height of this form of building began to be approached. The floors and roof were now frankly supported on metal beams and columns, and it was but a step from placing columns against the walls to placing them in the walls and making the walls non-bearing, that is screen or curtain walls. The practical limit with this form of construction is about eighteen stories, first reached in 1894.

Then began the development in which the mason loses rank and begins to take the secondary place. With the advent of the "cage" construction—that is, a well braced framework of steel designed to support not only the floors but the facades and every part of the structure on vertical columns of steel going to bedrock—the mason, the house builder from the era of the Pyramid, yields place to the "housewrecker."

With the introduction of cheap structural steel and the improved methods of fireproofing which have kept pace with growth in altitude, the engineer and the housewrecker have perfected a new type of building—a structure which is organic, which is a unit, and which has a skeleton covered by a masonry sheathing or skin.

But masonry is not an appropriate material to make a skin out of. It is essentially a bearing, a supporting material. It is useful in mass, not in sheets. A skin covering is not a mass. It is of the nature of a membrane. And that is why some of the skyscrapers with their masonry ve-

# HOW BULGARS CHOSE KING

The career of Prince Ferdinand, now king, tomorrow perhaps emperor, is very instructive to those who would inform themselves as to the ways of the great ones of the earth, and who do not care to read their Bible, which is Machiavelli's "The Prince," writes Stephen Bonsai in The New York Sun.

After the kidnapping of Prince Alexander, and his subsequent abdication in the face of the czar's opposition, the throne of Bulgaria, had not naturally for some time gone a-begging. The regents, the leader of whom was Stambouloff, were holding their position against Russia, or at least against General Kaulbars, with the greatest difficulty. The vacant throne was refused by Prince Waldemar of Denmark and King Charles of Romania, and the Bulgarians refused to accept that Prince of Mingrelia, whom the Turks put forward.

It was at this juncture that the regents sent three delegates to inspect the royal cadets of Europe, in their search for an eligible prince. One of these delegates, Mr. Stolleff, was afterward was prime minister, on several occasions told me that he had been given up the search, and, preparatory to returning to his home in the Orient, expressed on the following day was spending the evening at Ronachers, at the time a famous night cafe and vaudeville theatre in Vienna. He was at the end of his quest, and failure stared him in the face. He had gone over the list with his colleagues and they were willing to come to Bulgaria to secure what Bismarck called in his famous conversation with the Battenberg prince "a pleasant son-in-law for their daughter, but not a daughter for their son."

Everybody in the theatre knew the mission of the Bulgarian trio, and been cartooned in all the comic papers. So Stolleff was not surprised when a man whose name he never knew, and who he believed to have been a perfect stranger to him at the time now came up and sat down at his table. "You gentlemen are looking for a prince," he began, "why do you take Prince Long Nose over there? We could get along without him splendidly."

"Prince Long Nose, who occupied an adjacent table, was not other than Prince Ferdinand of Coburg, then a lieutenant in an Austrian hussar regiment. Ferdinand had no love for soldiering, and spent his time studying and collecting rare stones and antiques. He spent most of his time at the chateau of Ebenthal, near Vienna, where he had a private library. Prince Clementine, lived. The unknown man and the delegate of the

Bulgarian regents clicked glasses, and soon separated, but the suggestion of Prince Long Nose was made inquiry, and found out that the Princess Clementine, a granddaughter of King Louis Philippe was exceedingly ambitious for her children, and exceedingly wealthy. One of her sons, the Count d'Eu, had married the daughter of Don Pedro, of Brazil. Consequently the widowed mother had centred her hopes and aspirations in the younger son.

Stolleff, on the following day, cabled Stambouloff of his bid, and it is said that the leading regent immediately came in person to Vienna. This statement is, however, disputed, and I have no first-hand knowledge of the facts.

As soon as the offer of the throne was made, Prince Ferdinand accepted it, conditionally upon his being elected by the Grand Sabor, or legislative chamber, and conditional upon the approval of his election by the powers. Russia refused to recognize the election and Ferdinand was, in the very start, placed under a diplomatic boycott. He was not to show to his countrymen after his accession, that he received full and general recognition of the position he had made for himself. He was not to show to his countrymen that if there ever was a self-made king it was and is Ferdinand of Bulgaria.

The Prince made no apparent effort to cut the leading strings by which his movements were so openly directed until in the Spring of 1893 he married Princess Alexandra. Then in January, 1894, came the birth of another son, Prince Cyril.

In May, 1894, Ferdinand at last summoned the courage to dismiss Stambouloff, whom he had come to regard and with good reason, as the principal obstacle to his general recognition by Russia. Stambouloff had fought Russia too long and too unfairly, perhaps, ever to be forgiven. In July, 1895, he came from France to the club, Stambouloff set upon by three assassins, who well nigh cut him to pieces with yataghans, and three days later the Premier, the maker of modern Bulgaria died.

The great grievance of the Bulgarians against Ferdinand was his political aloofness, his lack of what they called patriotic enthusiasm. At least on three occasions during the last ten years the country has, with practical unanimity, demanded that he lead them, or that he let them lead themselves into invading Turkey.

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# NEW SAILORS' HOME AT NORTH SYDNEY, C. B.

In the January issue of the Chart and Compass, an English monthly published in the interests of seamen, the world over, appears a report of another Sailors' Home recently opened in the maritime province, which is reproduced below. Incidentally, it may be stated the present accommodations of the Halifax apprentices for nautical men's point of size, appear insufficient for the larger number of seamen brought to port by the increased number of deep sea liners now coming here.

Closing the Door. That single six-years' presidential term is a closed door to Col. Roosevelt's ambition. The Colonel had better content himself with a seat in the Senate.

Kenzie wife of D. D. McKenzie, M. P., of the Dominion Parliament, assisted by the ladies of the W. C. T. U. This work has now been affiliated with the British and Foreign Sailors' Society. It was with great surprise and pleasure that the ladies heard of our world wide work, and of our interest in ourselves as co-workers. Mrs. McKenzie writes:—"After due consideration we resolved to affiliate, and we shall be pleased to receive guidance and encouragement from the parent society." Sydney is about 250 miles nearer to England Halifax.

Our Canadian stations now stretch from the farthest point east to the farthest point west of Canada. During a recent visit our Dominion representative (the Rev. Alfred Hall) made enquires as to the provisions for seamen at what is called The Sydney—Sydney, North Sydney and Sydney Mines. This is a very busy and rising centre of industry and maritime trade. At Sydney itself communication



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