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Author

A native of Deckerville, Michigan, Jason Spencer graduated from the College of Engineering at the University of Michigan, with a Bachelors of Science in Civil Engineering in 2006 and a Masters of Engineering in Structural Engineering in 2007. Upon graduation, Jason joined the international structural engineering firm of Thornton Tomasetti (TT) in Washington, DC. TT provides engineering design, investigation, and analysis services to clients worldwide on projects of every size and level of complexity. At TT, Jason worked on numerous commercial and institutional projects from conception through construction. After leaving TT, Jason worked at regional structural engineering firms in Chicago, IL and Denver, CO. Jason is a licensed professional engineer and a Leadership in Energy and Environmental Design (LEED) accredited professional for New Construction and Major Renovations. Upon completion of Cornell's MPS in Real Estate, Jason intends to pursue a career in development that successfully balances economic constraints, architectural aesthetics, and sustainable design principles.



Buildings are constructed for certain purposes, and the buildings of today are more practical, from the standpoint of the man who is in them than the older buildings. [...] We are considering effort and convenience much more than appearance or effect.

-Raymond Hood, architect of Rockefeller Center

Roark looked across the river at the shell of the unfinished building on an unusually cold April morning in Metropolis. The building, originally designed to be the signature property of an elite hotel company, sat partially finished on the south bank of the Metropolis River.

As Roark looked at the building, questions raced through his mind: Was the unfinished building an opportunity or just a waiting nightmare? If his company purchased the building, how should it be completed and as what?

South River Tower

Clark Street Development Group (CSDG) came up with the idea for South River Tower in 2005, just as new construction starts in Metropolis, and across the country, reached record highs. CSDG had a track record of developing office buildings throughout the region, but was looking to get into hospitality and mixed-use development sectors. As such, the company sought to build a tower that would have approximately two hundred luxury hotel rooms on the lower levels and two hundred luxury condos on the upper floors.

The building site was located along the Metropolis River, one block from a busy subway station, five blocks from a premier retail street, and six blocks from a large public park. CSDG wanted to design a building that would redefine the Metropolis skyline.

CSDG hired Hancock Tooth Architects to be the lead architect on the project. Since South River Tower was going to be such a departure from the company's previous projects, CSDG wanted to work with an architect that it had previously worked with. Like CSDG, Hancock Tooth had extensive experience designing office buildings throughout the region, but had designed only a few hospitality projects. To reduce the project's upfront costs, CSDG offered Hancock Tooth a 2% equity share and the ability to have full aesthetic design control of the building instead of the traditional 7% design fee.

Hancock Tooth was enticed by this unusual opportunity and designed a trophy-worthy, 1.6M square foot (SF); 95-story building that had an intricate glass and stone facade. High-end finishes were specified throughout the building.

The first two levels of the building were designed to have great street visibility and would be occupied by high-end retail stores. Levels three through twenty-five would be parking, and levels twenty-six through ninety-five would house the hotel/residential tower. Levels twenty-six and twenty-seven would house the hotel's amenity spaces. Levels twenty-eight and fifty-nine housed mechanical equipment that was needed to service the rest of the hotel tower (**Exhibit 1**).

Hancock Tooth, in conjunction with the structural engineer, sought to save costs by using an efficient reinforced concrete structural system, in which the columns would be spaced at 20'-0" on center in both directions (**Exhibit 4**). This relatively small spacing would allow the columns to be placed inside the demising walls between units. Twenty-inch

thick concrete core walls would surround the elevator and stair shafts and resist the forces imposed by the strong Metropolis winds.

CSDG hired Jackson Lee Construction as the general contractor. Like Hancock Tooth, CSDG got Jackson Lee involved in the project early, during the schematic design phase. Throughout the design process, CSDG continued to have Jackson Lee review the progress drawings to better understand the project's costs and to identify possible value engineering opportunities. Despite following this approach, the total costs, per square foot, for the project were \$275 for the retail levels, \$200 for the parking levels, and \$375 for the hotel/residential levels. Using these numbers, Jackson Lee estimated that the project's total hard costs would be \$515M and construction would last twenty-seven months once ground was broken.

Construction Stops

CSDG wanted to start construction on South River Tower as soon as possible. To accomplish this, the company funded the excavation and foundation costs using \$30M of its own equity and took out a \$40M one-year bridge loan from Bank A. CSDG anticipated that these funds would finance the first year of construction. Meanwhile, the company would look for a permanent construction loan to finance the remaining construction costs.

In the spring of 2007, when site excavation began, tower cranes were everywhere in Metropolis and it looked like South River Tower would be a great success. By the fall of 2007, foundation construction was complete and the building was beginning to go vertical. Building activity in the city was still strong, but lenders were getting nervous about all of the new supply coming on line and started to raise lending rates, especially for new construction loans. At this point, the original \$60M that had been invested in the project had almost been exhausted and CSDG still had not secured a permanent construction loan. The company had talked to several lenders, but the higher rates and lower loan-to-value ratios that were being offered significantly decreased the project's anticipated return. CSDG believed that the market would improve shortly and invested an additional \$10M of equity into the project while it kept looking for more favorable lending terms.

Construction crews built about one story per week and by the fall of 2008 the building was twenty-one stories tall. While the building was going up rapidly, the economy was shrinking and the demand for luxury hotel rooms and residential units was shrinking exponentially. By this point, CSDG had already invested \$30M into the project and the bridge loan had been completely exhausted and was coming due in less than six weeks. Construction loan terms had not improved and several of the loan offers made earlier in the year had been rescinded.

By early October, Jackson Lee was not getting paid on time. A year earlier, when new construction projects were plentiful, the contractor would have abandoned the project, but by this point, there was not another project to go to. As such, Jackson Lee agreed to continue building with the hope that the economy would improve and CSDG would be able to get a construction loan.

By January of 2009, it became apparent that CSDG would not be able to get a construction loan. The building was twenty-five stories tall, but Jackson Lee had not been paid since early October and was owed approximately \$15M. The pace of construction declined dramatically and several sub-contractors walked off of the project due to lack of payment. Bank A was also demanding repayment of the one year bridge loan the bank had made to get construction started and was threatening to file suit against CSDG.

In February of 2009, CSDG suspended construction; however, it was more of a formality as little progress had been made since the first of the year. As soon as construction stopped, the tower crane came down and the building was abandoned, fully exposed to the

elements. The general contractor and several sub-contractors filed mechanics liens against the building. Bank A also filed suit against CSDG for its failure to repay the bridge loan.

New Ownership

After construction stopped, CSDG looked everywhere for additional sources of financing, but the national economy was in terrible shape and no one was willing to take a risk on the project. Desperate and out of options, CSDG agreed to turn the project over to the contractors and lender in February of 2009 to resolve the unpaid bridge loan and mechanics liens that had been filed against the building.¹

Bank A and Jackson Lee did not know what to do with the building: the national economy was extremely weak and the hotel company that the building was originally designed for backed out of the project. Bank A did not want to be in the development business and was unwilling to put any more money into the project. Jackson Lee was looking for work, but like Bank A, did not have any development experience or the financial resources to restart the project. After a few months, it became apparent that Bank A and Jackson Lee would have to find an experienced developer to partner up with and finish the building or sell the site as is. The uneasy ownership group began making calls to gauge potential interest in both options.

Port City was initially contacted about the project in the summer of 2009, but was apprehensive about getting involved in the project. The national and local economies had stabilized, but vacancies were elevated all across Metropolis while rents were significantly lower than what they had been in 2007. Due to its good location, Port City was interested in acquiring the site outright, but Bank A and Jackson Lee rejected the company's offer and instead proposed forming a joint venture to finish the building. Port City did not have an existing relationship with Bank A nor Jackson Lee and was nervous about undertaking such a risky project with an unfamiliar team. In the end Roark and Port City decided that finishing South River Tower was too risky.

The building sat abandoned for two more years – a symbol of the 2008 financial meltdown. The concrete shell had become an eyesore and the city was eager to see the project completed or demolished. Fearing a city takeover of the project, Bank A and Jackson Lee were motivated to get whatever value they could out of the unfinished building. Once again, they contacted Roark and Port City in regards to the project.

Port City

Port City is a large developer that is focused on developing new office and multi-family properties in the United States. The company started in New York City in the late 1960s and grew into one of the largest privately held real estate companies in the United States. The company now has offices in several U.S. cities including Metropolis, Chicago, and New York.

Unlike other multi-city real estate companies, the different offices have limited interaction and, in some ways, operate like separate franchises. Each office finds and manages its projects. 20% of each office's yearly profits are set aside to pay for company-wide expenses and to fund corporate growth initiatives.

In late 2008, Port City created an \$800M opportunistic fund that was focused on acquiring distressed assets. The mission of the fund was to identify distressed residential projects in core markets that had stopped or been significantly scaled back due to the

¹ The ownership percentage of Bank A and Jackson Lee was divided based upon how much money each party was owed. As such, 74% of the property reverted to Bank A, while the remaining 26% reverted to Jackson Lee.

recession. If these project presented an opportunity, the fund's managers would consider investing anywhere between \$25M and \$75M in them in an effort to finish and stabilize them as soon as possible. When Bank A and Jackson Lee contacted Port City again in 2011, Roark thought about South River Tower's superior location and started to think that this might be a perfect recovery fund investment opportunity.

Market Analysis

Soon after beginning an in-depth analysis of the project, Port City concluded that there was not sufficient demand in Metropolis to support a 95-story luxury hotel/residential building.

Spurred by recent laws passed by the city and state governments, the business environment had become friendlier in Metropolis and a few large corporations had recently relocated their headquarters to the city. As such, the office market had rebounded slightly, but there was still more than 1 million square feet of vacant space in the CBD. Class A rents in the immediate neighborhood of South River Tower were around \$25/SF with \$50/SF of tenant improvements and six months of free rent.

Roark anticipated that, if the building was completed as an office building, it would take twenty-six months to complete construction. At project completion, Roark thought that the building would be at least 65% preleased and that the remainder of the space would be absorbed at 8% per year.

While the office market was relatively stagnant, the multi-family market was showing modest gains. During the 1990s, several multi-family buildings were built just north of the Metropolis River. These buildings were typically 30-40 stories in height and offered studio (approximately 550 SF), 1-bedroom (800 SF), and 2-bedroom apartments (1,100 SF); and rented for around \$2.00 per SF per month. These buildings typically had modest amenities that included a fitness center, indoor pool, party room, and a sun deck.

Prior to the recession, most of these buildings' residents were younger, transient millennials who would live downtown for a year or two before moving to one of Metropolis's northern neighborhoods. As such, the market demand was much higher for smaller buildings in the area 1 – 2 miles north of downtown than it was for the immediate downtown area. Empty nesters were also beginning to move back into the CBD. However, architects and developers often struggled to design a building that would appeal to both millennials and empty nesters.

Roark thought that if he redesigned the building to have larger units and more luxurious amenities that he would be able to attract a diverse group of residents, achieve a higher level of occupancy and garner higher rents relative to the nearby residential buildings.

If the building were completed primarily as a for rent multi-family residential building, he thought that it would take twenty months to complete and that 70% of the apartments would be preleased prior to opening. After completing construction, Roark anticipated that it would take two years to get the building stabilized at an occupancy level of 95%. The rental market for luxury units in Metropolis had improved significantly and Roark anticipated that he would be able to rent the units for a minimum of \$1700/month (**Exhibit 3**).

Design Concerns

The original 95-story structure was designed to be extremely robust; however, the floor plates and column layout were designed to accommodate usage as a hotel. Changing the building's usage would require reconfiguring the floor plates and column layout.

Finishing the project as an office would require eliminating all of the interior columns and the building's interior core would have to be enlarged to accommodate additional elevators that would be required to service the increased occupant load. The capacity of the existing foundations would also have to be carefully examined. The initial design assumed that levels twenty-six through ninety-five would be eight inches thick and support a live load of 40 pounds per square foot (PSF). In order to eliminate the interior columns and support the required office live load of 90 PSF, the floor slabs would have to be thickened to eleven inches (**Exhibit 5**).

A preliminary structural engineering analysis indicated that the existing foundations could support a 45-story office building or a 60-story apartment building without the need for reinforcing the existing foundations. The existing foundations could be reinforced, but doing so would significantly increase construction costs.²

The existing structure's condition was not completely known. From afar, the structure looked sound, but nothing had been done to weatherize the structure when it was abandoned in the winter of 2009. A closer inspection of the structure revealed that some of the concrete's steel reinforcing bars were corroded and concrete was spalling off in localized areas (**Exhibit 7**). Further analysis would have to be undertaken to determine the extent of the damage and if the structure could be reused. This condition assessment would be estimated to cost at least \$50,000.³

If Roark redesigned the building, should he retain Hancock Tooth as the architect or hire a new one? Going forward, Roark did not want the architect to have any equity participation in the deal, but he was not sure that Hancock Tooth would agree to this arrangement. If a different architectural team redesigned the project, would the two phases of the redesigned building look coherent or would it look like two completely different buildings stacked on top of one another?

Potential Deal

As Roark and Port City neared a decision as to whether or not to buy in to the project, old concerns rose again. In most distressed projects, the bank would have sold its interest to a different entity; however, Bank A wanted to remain in the deal and attempt to recoup some of its losses. Jackson Lee also wanted to recoup some of its losses and saw the project as a potential source of employment in a weak market.

Roark was still concerned about the about the complicated structure of the proposed joint venture. Roark was also concerned, that Jackson Lee would try to make an exorbitant profit on the project. If Roark were to enter into a joint venture with Bank A and Jackson Lee, specific rules would have to be developed to detail each party's role and participation (**Exhibit 8**).

Securing financing for the project would also be extremely difficult: Port City would contribute a maximum of \$75M into the project from the recovery fund, but it was going to take substantially more money to complete the building. Unfortunately, other potential sources of additional financing were limited. The commercial mortgage-backed securities market was pretty much non-existent. Commercial banks were willing to make floating rate construction loans, but were hesitant to make loans that exceeded a 70% loan-to-value ratio and were demanding interest rates 750 basis points above the LIBOR rate floored at 1%.⁴

Roark approached Bank A about taking a larger equity position in the project or loaning

² Each additional office floor above the 45th floor would require would require \$900,000 in additional construction costs to strengthen the existing foundation system and building structure.

³ In the retail space, \$75/SF would be required to repair the corrosion damage. \$50/SF would be required to repair the corrosion damage done to the parking garage.

⁴ The 1-yr LIBOR rate in the summer of 2011 was 0.72%.

money at favorable rates to Port City. Unfortunately, Bank A's directors were hesitant to contribute any more money. Roark considered asking Port City's board of directors for permission to invest more than \$75M from the recovery fund to finance the project, but he was not sure that he would get approval to do so.

Deal or No Deal

As Roark looked across the river, he knew that the abandoned tower presented a unique opportunity, if he could just find the right use for the site, make the numbers work, and navigate a complicated joint venture agreement with Bank A and Jackson Lee.

The preceding narrative is not intended to be representative of any one project but is derived from several projects that ran into financial trouble during the 2008 financial crisis.

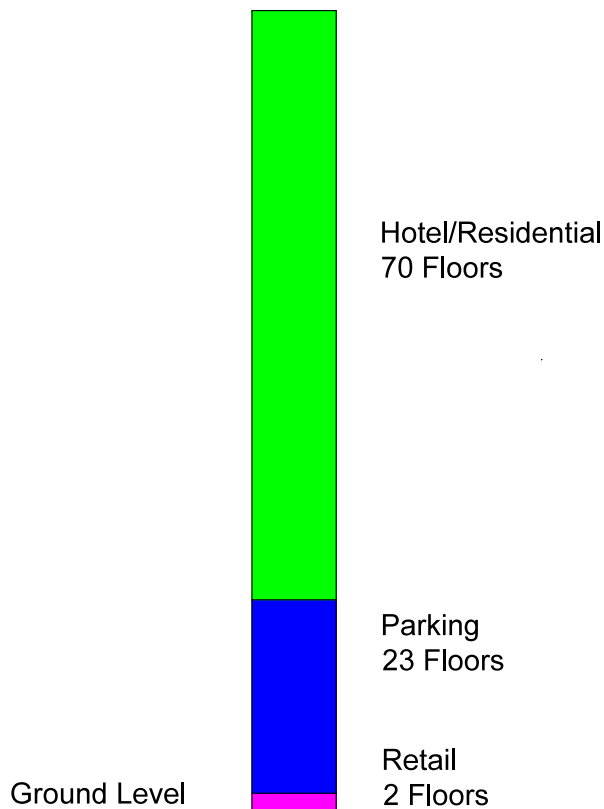


Exhibit 1

Original Stacking Plan



Exhibit 2

Initial Construction Costs

Exhibit 3

Potential Building Revenues as a 95-story Residential Building

Residential Revenue						
Top Floor	Bottom Floor	Units/Floor	Total Units	Size/Apt	Rent/Apt/Month	Total Rent (\$)
95	90	4	20	4000	\$12,000	\$240,000
89	85	4	16	4000	\$10,000	\$160,000
84	80	6	24	2667	\$8,000	\$192,000
79	75	6	24	2667	\$6,500	\$156,000
74	70	8	32	2000	\$5,500	\$176,000
69	65	8	32	2000	\$5,000	\$160,000
64	60	8	32	2000	\$4,500	\$144,000
59	55	8	32	2000	\$4,000	\$128,000
54	50	10	40	1600	\$3,500	\$140,000
49	45	10	40	1600	\$3,000	\$120,000
44	40	10	40	1600	\$2,500	\$100,000
39	35	14	56	1143	\$2,000	\$112,000
34	30	14	56	1143	\$1,850	\$103,600
29	25	14	56	1143	\$1,700	\$95,200
Total		320	500		\$798,800	\$2,026,800

Parking Revenue						
Top Floor	Bottom Floor	Spots/Floor	Total Spots	Size Spot (SF)	Rent/Space/Month	Total Rent (\$)
24	3	77	1617	180	\$200.00	\$323,400.00

General Vacancy (%)	15%
Effective Parking Rent (\$)	\$274,890.00

Retail Revenue						
Top Floor	Bottom Floor	Size (SF)	Total Space (SF)	Rent/SF/Year	Rent/SF/Month	Total Rent (\$)
2	0	20000	40000	\$250.00	\$20.83	\$833,333.33

General Vacancy (%)	5%
Effective Retail Rent (\$)	\$791,666.67

Total Effective Monthly Rent (\$)	\$3,093,356.67
Total Effective Yearly Rent (\$)	\$37,120,280.00

Top Floor	Bottom Floor	Depth (FT)	Use	Number of Floors	Floor Size (SF)	Built (Y/N)	Total SF	Hard Cost (\$/SF)	Forecasted Hard Cost (\$)	Total Actual Cost Incurred (\$)
95	25	160	Hotel/residential	70	16000	N	1,120,000	375.00	\$420,000,000	\$0
24	3	200	Parking	21	20000	Y	420,000	200.00	\$84,000,000	\$84,000,000
2	0	100	Retail	2	20000	Y	40,000	275.00	\$11,000,000	\$11,000,000
Total							1,580,000		\$515,000,000	\$95,000,000

Soft Cost (% of forecasted hard costs)	11%
Total Soft Costs (\$)	\$56,650,000.00
Total Investment at Foreclosure (\$)	\$151,650,000

Exhibit 4

Original Column Layout

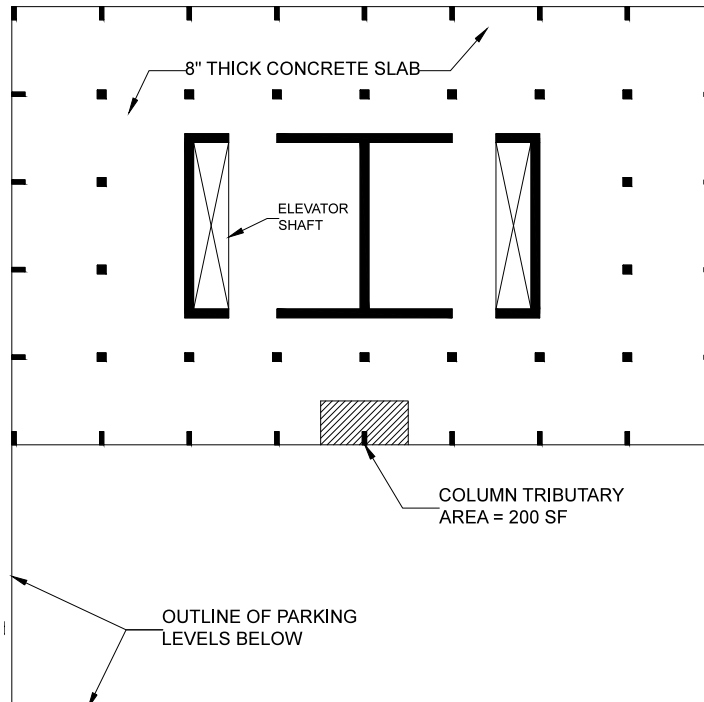
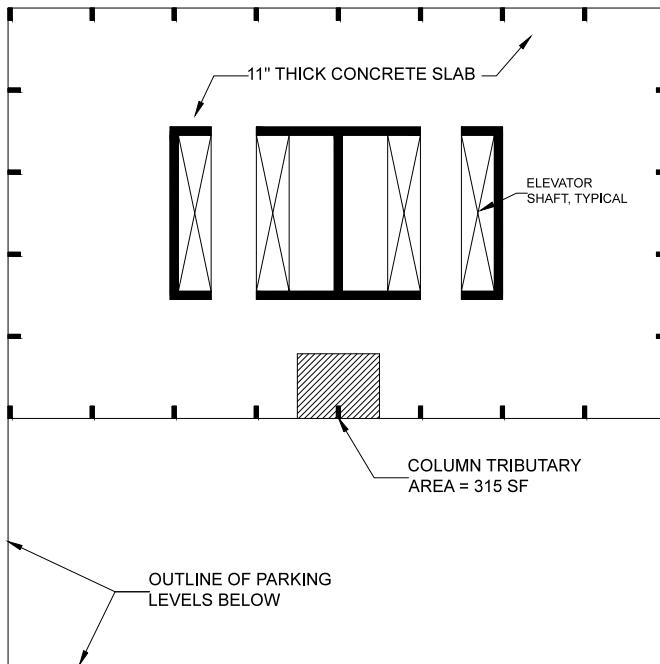


Exhibit 5

Revised Column Layout to Accommodate an Office Use



Turner Building Cost Index

"The economy in the United States has shown signs of slow growth over the past six months. However, the construction market has remained relatively flat as an increase in private sector activity is offset by lower levels of activity in the public sector. Market competition continues to restrain the overall impact of slowly increasing material and labor costs."

Karl F. Almstead
Vice President

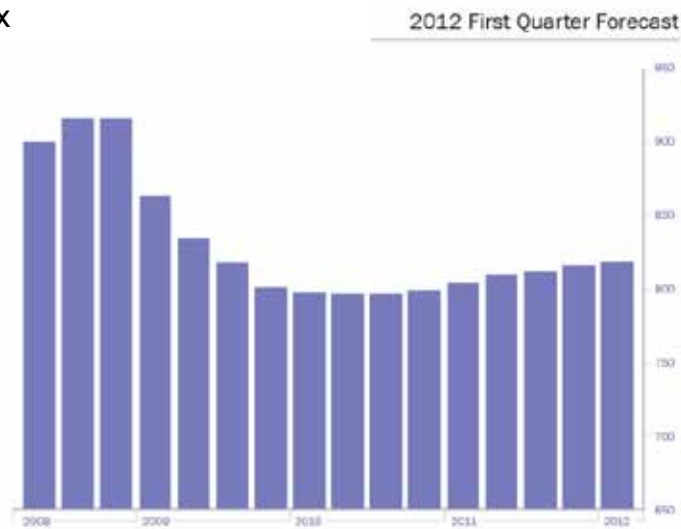


Exhibit 6

Turner Construction Building Cost Index for the First Quarter of 2012



Exhibit 7

An example of the concrete deterioration that was typical on site



Exhibit 8

Proposed Joint Venture Participation

