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Table of Contents

EXECUTIVE SUMMARY	4
INTRODUCTION	5
BACKGROUND	5
Compelling Reason to Act	6
Comparison to others	6
Expectations	7
Project Organization	7
PROJECT PLANNING & SCHEDULING	8
Chronology	9
Project Timeline from Different Perspectives	15
PSU Administrative	16
PSU Project Team	16
Design-Build Team	18
FINANCIAL ASPECTS	18
Budget Effect on Design	20
Negotiations	22
LESSONS LEARNED	23
CONCLUSION	26
REFERENCES	ERROR! BOOKMARK NOT DEFINED.

Executive summary

With the new Recreation center, Portland State University is further strengthening its status as Oregon's largest university. Looking at it from the project management perspective, the following report looks the project life cycle, explains obstacles as well as states lessons learned.

Due to the magnitude of the project, the challenge, but also the learning potential is very high. Analysis of the project clearly showed the importance of the planning section in a project's life cycle. Furthermore, being a project manager, it is essential that all information is verified personally in order to avoid mistakes. Delays, which occurred over time led to cost increase and emphasize the importance of accurate planning as well as ongoing trade-offs between cost, quality and time.

Eventually, the project gives further proof that nowadays, every project is somewhat cross-functional and communication is the key to enable successful collaboration. The project itself is not done yet, however from project management perspective, it is already considered being a huge success.

Introduction

Within the last year Portland State University (PSU) has become the largest university in the State of Oregon. To support the growing number of students, the University has invested in the Portland State Recreation Center. This state of the art facility will provide the students and city with the physical fitness options needed to satisfy the demand of today's health conscious population.

This project will examine the project background and management from the perspective of the project owner, PSU. First the paper will examine the project initiation phase. Next it will focus on how the project fits within PSU's long-term goals. The demands of project team diversity will be investigated followed by an analysis of the heart of the project including the following: applied project management methods, project scheduling and tools, and the project funding. The major project problems and solutions associated with these aspects will be identified and discussed. Lessons derived from the PSU model along with project management concepts learned in the class will be used to analyze and provide recommendations for future developments.

Data collection was done by literature review (newspapers, PSU publications). Furthermore an interview with Alex Accetta, Director of Campus recreation, was conducted providing further insight to everyday's work

Background

On July 2006, the State Board of Higher Education for construction of PSU's new Academic and Student Recreation Center has provided PSU with restraint budget of \$64.5 million to build the new facility with the addition of the Portland City archives.

The facility is currently under a fast pace of construction plan and should open in late 2009 or early 2010 [1]. The facility will be located on the Urban Plaza southern border across from the College of Urban and Public Affairs, PSU's Urban Center. It is a multipurpose use facility with academic/classroom space; student recreation space; offices for the Chancellor; ground floor retail and space for the City of Portland archives.

Compelling Reason to Act

The present Recreation facilities are falling short of meeting campus need. First of all, since the current Stott center is shared between Campus Rec, the athletics department and Physical education, Scheduling priorities result in restricted access to recreation facilities and programs, most of the time leaving campus Rec being the to be the sufferer. Furthermore, the current building certainly does not meet student’s requirements for socialization and campus community. Thirdly, multiple points of building entries weaken user control and safety. Ultimately, the rapidly growing number of students as well as their increasing health consciousness proves that a new Rec center is a necessity.

Comparison to others

For its size whole campus size of 4.5 million square feet [2] PSU has the worst recreation center on the west coast. The following table shows a comparison of some of the recreation center facility to two other universities: Washington State University, and Oregon State University.

	PSU	WSU	OSU
Multipurpose Rooms	9,000 SF	9,428 SF	11,041 SF
Pools/Climbing	12,600 SF	16,084 SF	17,307 SF
Lockers	(2) @ 1,920 SF	5,324 SF	7,000 SF
Administration/ Food Service	2,000 SF	4,832 SF	4,833 SF

Table: 1 Comparison Table [3]

As can be observed from the table, Portland State University is achieving the lowest square foot in respect of the criteria provided. That reveals the truth of having the smallest recreation center in the west coast and the necessity of having a new one.

Expectations

The expectations, as defined by the student recreation facility committee, were to build up a facility program and site concept that [3]:

1. Provides exciting community places that incorporate social and entertaining uses.
2. Provides various social spaces where students can just settle down.
3. To be operated by the student and for the students.
4. Accommodate for hosting adaptive sports programs.
5. Modernizes facility:
 - a) Accommodates the federal disability access
 - b) Incorporates sustainable building practices.

Project Organization

The project team is basically led by 3 groups: First, Portland State University, which represents the owner and project manager. Second, there is Skanska USA that represents the builder of the building. YGH (Yost Grube Hall) Architects designed the building and is the third part of the leadership team. They work with Skanska to make sure the building is built to the right specifications and the details are correct. Even though PSU has the formal authority and provides the project manager (Ernest Tipton, Campus Design & Planning Manager), those three firms collaborate intensively including weekly meetings. Each of them furthermore has its own team that supports them. Skanska for example employs two coordinators to deal with over 70 sub-contractors during the construction process.

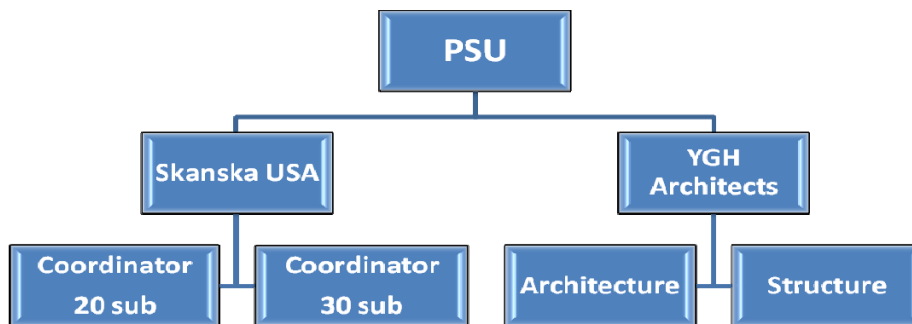


Figure 1: Project organization

Besides these 3 groups, other stakeholders like the city of Portland, OUS as well as the Department of Social work (which all will be in the building as well) are also participating in the project in order to make sure that their interests are not ignored.

Project Planning & Scheduling

This section considers the project development timeline together with the efforts and resources utilized in the planning and scheduling of this project. Project timeline includes major events affecting the project with respect to project financial and schedule. In addition, the results and actions taken by the project team, as results of those major events, are also discussed to link to the lessons learned of the project and how would the project better perform in later sections. The major events occurred in the project are summarized below.

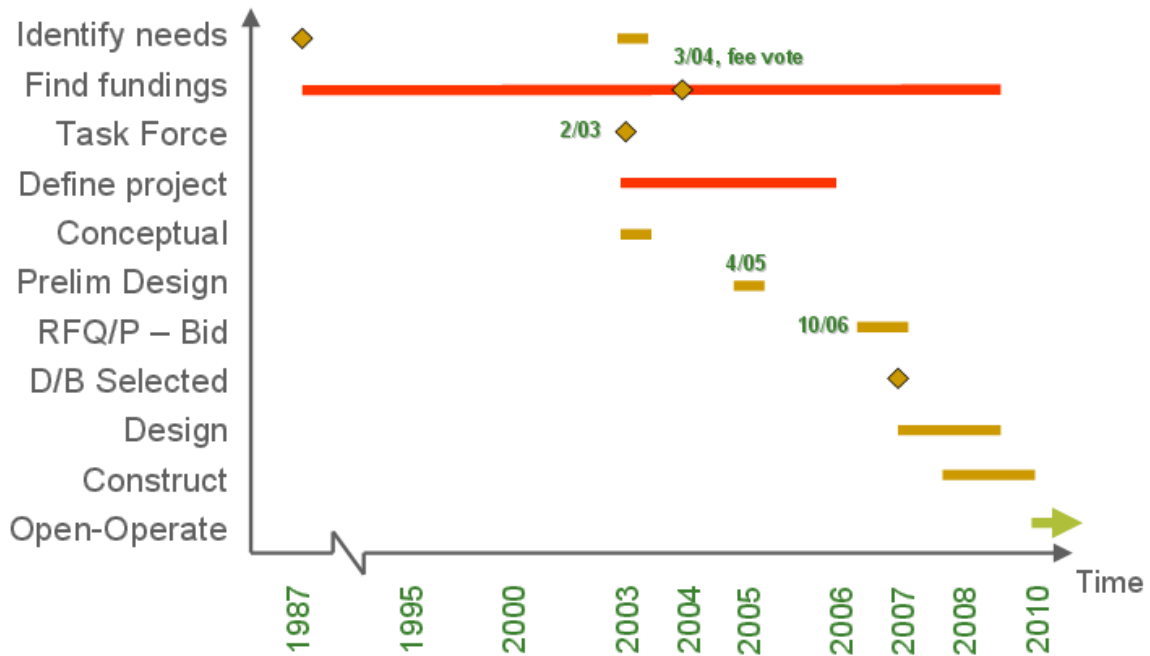


Figure 1: Project Gantt chart

Chronology

1987

The need for this new recreation center was identified for the first time by a PSU Presidential Task Force in 1987 concluding that “the current facility (Peter Stott Center) does not meet the needs of today’s students and serious thought must be given to the creation of a new building if we are going to meet everybody’s needs” [1]. With the aggressive projected growth of PSU’s student enrollment, the existing facility would be extremely over used. On the other hand, having the new recreation center would assist PSU in meeting the set goal of growth by attracting and enhancing student life. As a result, the need was identified and the new recreation center has been a good fit to PSU’s goals.

1990

Every project requires financial supports not only for success but also for being able to start. Finding and securing funding sources for the new recreation center were very important at the beginning. Since the university budgets in general are limited comparing to all the needs the university has to support, it has been challenging for this multi-million dollar project in the financial aspect. In addition, Oregon Ballot Measure 5, passed in 1990 [6], changed the funding structure for school from government and put the financial aspect of this project into even more challenging situation.

2003

The Student Recreation Center Task Force (Task Force), composed of five students and four professional staff, was appointed in 2003 to move the project forward.

The Task Force, with approval from the student government, started to study the feasibility of the new recreation center, hired the architecture and planning firm Yost, Grube, Hall Architecture (YGH) to conduct a conceptual study of what the appropriate facility would be to meet the recreation needs for the future of Portland State University (PSU Recreation Center Conceptual Study). The study was completed and the results of the survey conducted as a part of the study suggested that the time has come to create such a new recreation facility. The need was then reaffirmed in the form of formal report

from professional service. [5] The analysis included impact evaluation to the historic house and significant trees, and the feasibility of including a 51,000 sq. ft. student housing to the envisioned 130,000 sq. ft. recreation facility. The proposed location of the new facility in this study was on the central campus block bounded by 11th Avenue, 12th Avenue, Market and Mill Streets. [7]

2004

The report conducted in 2003 was used as a basis for developing a student campaign for consideration of a new Student Recreation Fee to support the project. In April this year, the increase of the Student Recreation Fee was approved from the students of PSU by vote to support the development of this new facility and the bonds for the center portion of the project and cover operating expenses.

2005

Following the vote, Opsis Architecture was appointed by the PSU Facilities and Planning department to conduct a preliminary study and design to redevelop the PCAT site located between 5th and 6th Avenue adjacent to the new Urban Center plaza, which is the location of the old PCAT building. A multi-use facility was envisioned by the proposal including underground

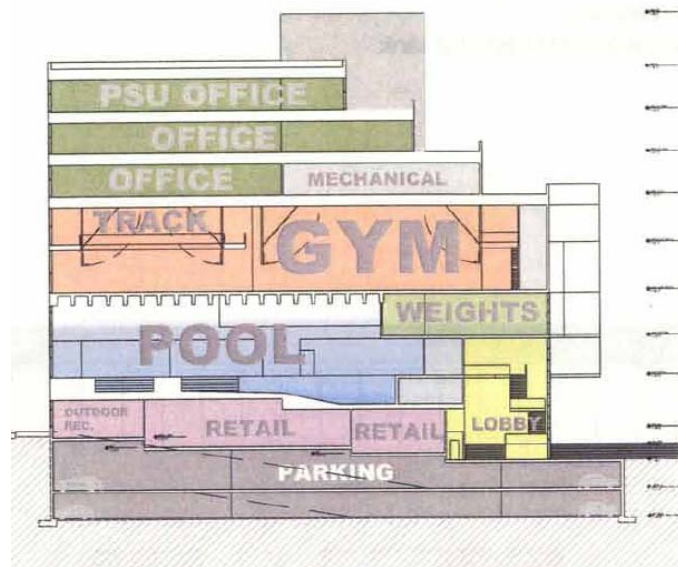


Figure 3: Building structure

parking, ground floor retail space, PSU administrative office space, and a new student recreation center (50% of the building total square footage).

The project planning processes were identified in the report that included identifying key goals and visions, conducting extensive information gathering, programming each program element based on needs, and then creating a concept design responding to the vision and program. The preliminary design was created with guidance from a Steering

Committee consisting of multiple functions across PSU to review the program information, conceptual designs, and cost estimates during the length of the study project for the most efficient program that meets the goals and needs of the university. The committee included PSU Recreation, Student Government, PSU Administration, PSU Foundation, PSU Facilities, and others. The construction costs for the recreation center portion in 2004's dollars was estimated to be \$24.3 million out of the total estimated construction costs of \$43.3 million, which was escalated and added with other soft costs to \$62.7 million based on New Student Recreation and Housing Center Proposal The project cost estimate based on this report is shown in the table below.

Construction Costs in Today's Dollars		
Below Grade Parking	70,693 sq. ft.	\$ 6,319,282
Recreation Center	122,066 sq. ft.	\$ 24,261,383
University Office	36,165 sq. ft.	\$ 5,030,481
Tenant Office	36,165 sq. ft.	\$ 5,030,481
Retail	18,508 sq. ft.	\$ 2,648,655
Total Construction <i>* Do not include Tenant Fit-Out</i>	283,596 sq. ft.	\$ 43,290,282
Total Escalation Costs	\$ 2,164,514	
Total Tenant Fit-Out	\$ 3,015,500	
Total Soft-Costs	\$ 14,225,579	
Total Project Costs	\$ 62,695,876	

Figure 4: Project Cost estimated Table

The project schedule is shown in the figure below. Note that the project timeline was based on a State Board and University decision to move forward with the project in June 2005 and the proposed completion date was in October 2007. The total design and construction time would be 29 months with 21 months in construction [7].

SCHEDULE SUMMARY TIMELINE

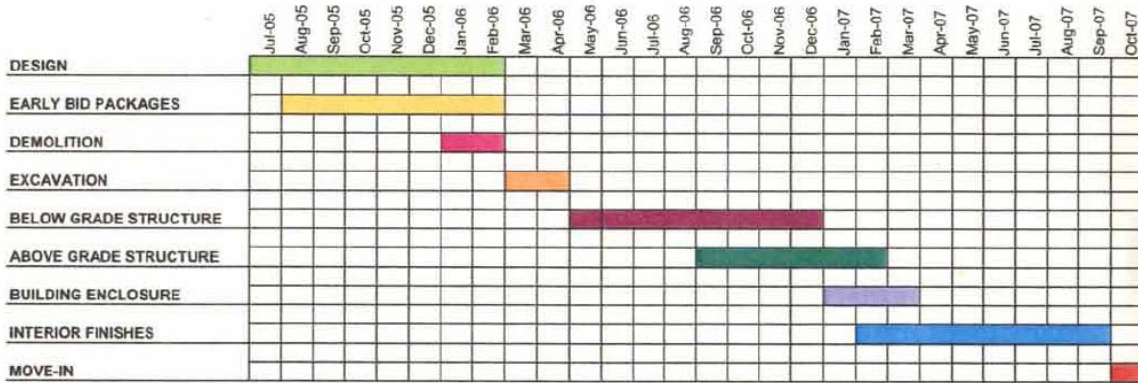


Figure 2: Schedule summary

2006

The request for qualification and proposal (RFQ/P) process was initiated in 2006 to select the design-build team to design and construct the project. The RFQ was out to select 3 qualified design-build teams to compete for the design-build contract for this new student recreation center with PSU. Following the RFQ, the RFP was out for the qualified teams to compete for the project by submitting the proposal for PSU to consider.

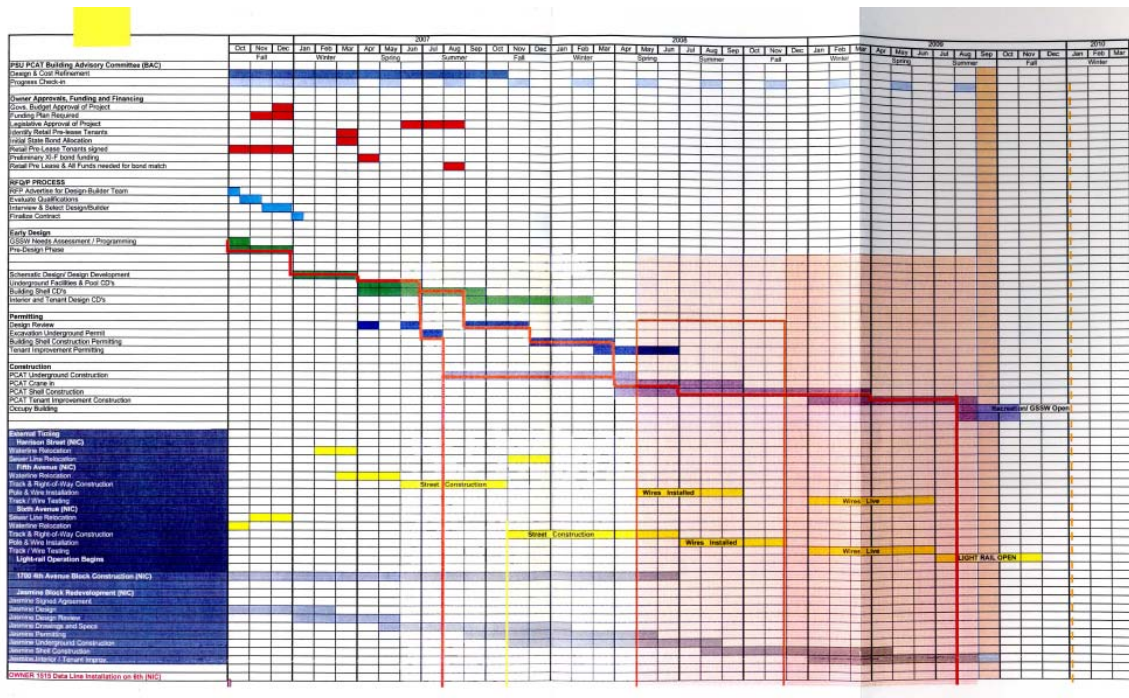


Figure 6: Adapted schedule

The preliminary project schedule/timeline included in the RFQ/RFP document is shown the figure above. Note that this schedule was changed substantially from the project timeline presented in the previous preliminary study with respect to the start and completion date and project delivery method. The proposed completion date was changed from fall 2007 to winter 2010, 2.5 years shifted from the previously identified completion date. The total design-build time would be approximately 34 months. The project delivery method was changed from the assumption of the fast-track Construction Manager/General Contractor (CMGC) method with early bidding packages for some specialty construction activities [7] to the design-build method. The Skanska/YGH design-build team's proposal was selected by PSU and the construction was scheduled to start in July 2007.

Design-Build Team Selection Process

The PSU committee has formed an evaluation team in order to select the design-build team that is qualified in the design/concept proposal, design/concept presentation, and guaranteed fixed fee price proposal. The committee evaluates and gives them the scores ranges by a maximum possible point score for each criterion. The criteria are followed; experience level of background of the Design-Builder Team, experience with higher-education recreation facilities, experience of the Design-Builder in collaborating on multi-agency and/or multiple contractor developments, experience with City of Portland approval processes, schedules, budgets, experience with mid-rise mixed-use, projects, and quality, control performance, experience with "LEED" certified buildings, sustainability issues, and LEED. There are three participants qualified to propose for this project.

However, Yost Grube Hall won the competition due to the design of nice building that seems much more unified and coherent compared to competitors. According to Fred Leeson, a reporter from the Oregonian newspaper, he said one of the reasons YGH has been chosen was not the design, but it was the kind of timeless modernism of building that well generated [10]. Through the selection process, YGH offers confident to the PSU

committee in order to produce a masterwork that can turn the 20th century building to the building Oregonians love for a hundred years later.

2007-2009

In a personal interview with Alex Accetta, he notes that once the design-build team was under contract with PSU, the design started in winter 2007 and the construction started in July 2007. The project progress has been on target and the scheduled opening date is still unchanged from winter 2010. According to the interview, the design-build team has been doing a very good job on keeping the project on schedule and the budget is still on target. The team uses proprietary software to keep track of the project and manage the requests for information (RFI's) and authorization requests (AR's) occurred during the construction. It was also mentioned that the nature of the fast pace design and construction activities results in RFI's being generated at a high rate (854 RFI's as of March 31, 2009). These RFI's caused some contract change order (CO) during construction and the PSU project manager and representative have to manage the changes so that they do not impact the fixed project budget.

Project Timeline from Different Perspectives

The project timeline can be viewed by three different perspectives, which are PSU, the PSU Recreation Center project team, and the construction team. Different levels of perspectives focus differently on the project timeline or life cycle. Once the need for the project was identified and the project was initiated by the organization (PSU), the project was then developed and moved forward by setting up a project team or committee, securing funding resources, defining project, selecting project delivery method, hiring designers and contractor, and finally opening and operating the facility.

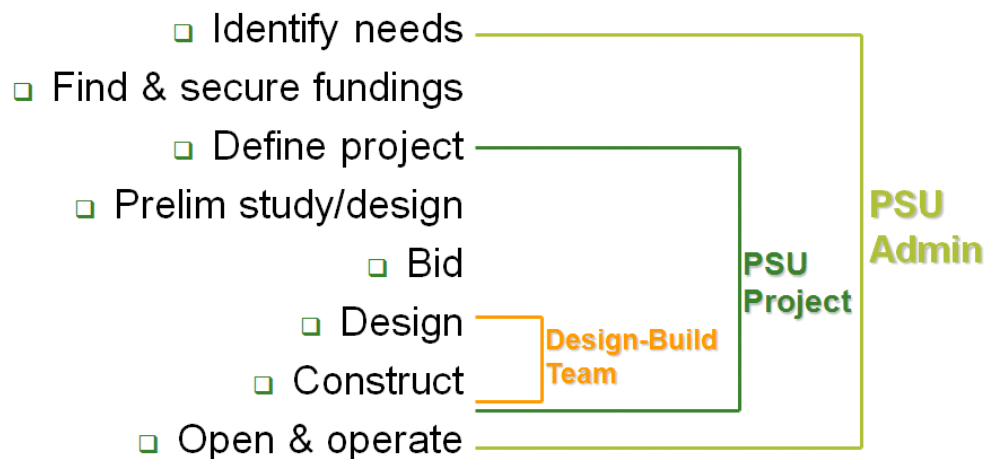


Figure 3: Project perspectives

From the figure shown above, this project can be viewed from 3 different perspectives. The owner (PSU Administration) views the project from the very beginning of the needs identification to the opening of the facility and beyond. In the viewpoint of PSU Project Team, the project ranges from the assignment received from PSU to define the project to the opening of the facility. In the viewpoint of the design-build team, the project starts from the bidding process and ends at the completion of the construction. With different perspectives, the goals and objectives of each group can be different but need to align with each other. The goals and objectives of the lower level viewpoints (i.e. contractor) are subset of those of the top-level perspective (PSU Administrative). Also, different groups would have different roles and responsibilities during the project life cycle. The

following section discusses how different groups perform with respect to project planning and scheduling.

PSU Administrative

This group is the top level of the project that initiates, sponsors, and gives direction to the project. This group defines the needs of the project and evaluates the project against the organization's missions, goals, objectives, and strategies. In addition, this group needs to supports the project by providing good top-level planning and adequate funding sources. From the project timeline mentioned in the previous section, the performance of this group would receive a low rating because of the significant project delay, which would considerably affects the final product received from the fixed amount of the approved budgets. This poor performance was mainly caused by the uncertainty in the project funding options and the major changes in the higher management (PSU President and Vice President for Finance & Administration) of PSU affecting the support to the lower-level project team. To be fair, these problems are considered challenging and hard to be resolved since they involve the governmental processes, policies, and organizational politics. Some of the problems were unfortunate to but some of them can be predicted and prevented from causing adverse impacts to the project by a good planning and the selection the right personnel with the right expertise to move the project forward.

PSU Project Team

This group is appointed by the higher level group who sponsors the project to move the project forward and focus on making the project happen within schedule and budget. They also play an important role in accommodating the policies and guidelines from the higher management to action within the project environment. With the problems encountered in the higher level, which were out-of-control by this group, the performance of this group is considered to be average by having the project defined and finally constructed. The major problems this group came across were the change in the project scope and the added stakeholders. The scope was changed from the student recreation center with a potential student housing program at one location to the student recreation center without student housing but with added city's archive, office and retail spaces for

several parties located at another location. These made the project larger and more complex, which required more time to plan and coordinate. In addition, there was one major scheduling constraint that significantly affected the project schedule, which was the construction of the proposed light rail on 5th and 6th Avenue. The PSU project team had to schedule the construction of the student recreation center to align with the construction schedule of the light rail projects, 2007-2009. If the recreation center project missed this construction window and had to construct after the light rail project was completed, the project cost would be increased significantly and this would potentially terminate the project feasibility. However, the PSU project team successfully put the project together, selected the design-build team, and scheduled the project construction to coincide with the light rail construction. The decision to use the design-build project delivery method was suitable for the situation since the project schedule can be accelerated by having the concurrent construction and design activities. This constraint is then considered a positive impact to the project since it accelerated the project schedule and made the project happen. The figure below shows the advantage of the design-build technique to the traditional design-bid-build project delivery method.

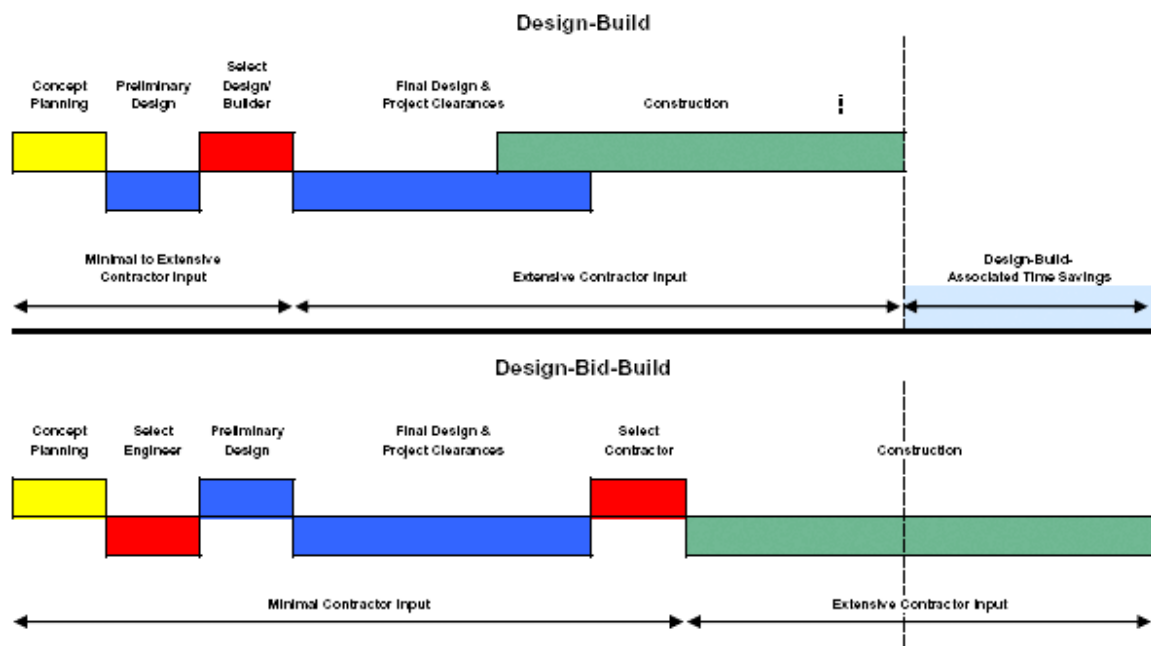


Figure 4: Design-build vs. Design-Bid-Build

Design-Build Team

The team, selected by the PSU Project Team during the RFQ/P process, has specific goals to design and construct the new student recreation center that functions according to the performance requirements within specific time and budget stated in the contract with PSU. The main goals and objectives from PSU were transferred through the PSU Project Team and then through the design-build team in a form of contract. The performance of the design-build team with respect to project schedule and planning is considered to be outstanding. With the limited time period for design and construction in the challenging project site that is located in downtown and in between the light rail construction, good project planning and scheduling are necessary for the project to be successful. The team has to work with multiple groups both inside and outside of the organization including the PSU representatives, city's planning department, other stakeholders, multiple design firms for this multi-disciplinary project, and more than 70 sub-contractors. According to the interview with Mr. Accetta, the design-build team uses tools to efficiently manage the project i.e. scheduling software, a system to keep track of all requests for information (RFI) and authorization request (AR), and the weekly construction meeting with the key project team members. Up to the time of this report, spring 2009, the project is currently on schedule and budget. The proposed completion date has not been delayed.

Financial Aspects

Many of the early delays revolved around finding funding for the new recreation center. "Ballot Measure 5 was a landmark piece of direct legislation in the U.S. state of Oregon in 1990. Measure 5, an amendment to the Oregon Constitution (Article XI, Section 11), established limits on Oregon's property taxes on real estate. Property taxes dedicated for school funding were capped at \$15.00 per \$1,000 of assessed value per year, and gradually lowered to \$5 [6]." The results of Measure 5 made acquiring state money difficult. The State could not raise taxes to generate the revenue, and all of the other school funds were previously allocated.

Early in the planning stages student surveys were conducted that identified how much students would be willing to contribute towards a new recreational center. This gave the University an idea of the amount of money they'd have to work with. Immediately they knew they did not have the support to make a state of the art facility. They did not even have enough financial support to own the entire facility so they looked into a condominium agreement. This allowed them to split the building costs as well as share the common ongoing fees.

The final condominium agreement gave PSU approximately half of the building space. Another major contributor was the City of Portland. "The city is contributing \$10 million to build the 181,300-square-foot center. In exchange, the city will put its extensive collection of archives and historic records in the center's climate-controlled basement with 13-foot ceilings, according to the *Portland Business Journal*. The city also will get fifth-floor office space [8]." To complete the atmosphere of the complex and fill out the building, "The ground floor will house retail storefronts and restaurants. The upper floors, in addition to the recreation complex, will house the university's School of Social Work, a new auditorium, general classroom space and the offices of the Chancellor of the Oregon State Board of Education [9]." Through lease fees the retail space will pay for itself over the life of the building.

Early in the planning stages PSU had a different location in mind. The proposed site encountered difficulties due to an old tree that nobody wanted to cut down. The Portland Development Commission got involved and solved two problems at once for the University. The PDC donated the current location as a land grant to the University. This solved the problem of both where to build the new building, and where the money would come from to purchase the land. The estimated cost of the land grant is \$7 million dollars.

The \$35 million student recreation and building fees were allocated through an Article IX-F(I) Bond Authority (See Appendix A). The students voted to approve an increase in tuition equal to \$41 / student / quarter. This money will be used to pay for the \$35

million dollar bond money PSU received. The operating expenses of the new recreation center will still be allocated from the student fees. Of the roughly \$220 / student / quarter approximately \$30 / student / quarter is routed to the recreation department.

A point worth mentioning is that the use of monies from the State requires the building to be LEED silver certified (LEED is a set of environment standards). There is a point system to judge the quality of the building. Among the points that the PSU recreation center has are water-efficient systems, which will reduce the building's water use by 50 percent. Its energy performance will exceed code by 35 percent. Reflective and green roofs will reduce urban heat islands in the summer and capture and retain natural heat during the winter [9]. Certification is not free. It costs approximately \$100,000 to \$150,000 to achieve the certification. This is a factor to consider when using public funds.

The entire building will cost around \$71 million. This is up from approximately \$62 million in the early planning stages. The long delays in the beginning had the unintended adverse affect of starting the building during a construction boom. The prices of commodities rose quickly during this time period such that the price of steel became a large source of project financial creep.

Budget Effect on Design

There were two components involved with scoring the bids. One of the selection criteria was the building design, but ultimately the second had to be budget. It is impossible to fully consider any designs, no matter how fitting, if there aren't adequate funds to build it. In this case PSU didn't give an exact amount to design for. Instead they listed their criteria and judge the entries.

Only one of the three designs passed the judging. Unfortunately it was still \$10 million over budget. PSU had to work with the winning designer to modify the design, erasing \$10 million dollars worth of features in the process. This restructuring only occurs with the help of many concessions. The new PSU recreation center is not a cutting-edge

facility. It is a very solid facility given the money available. A few of the missing top notch amenities included racquetball courts and an additional pool.

To cut \$800,000 they made the decision to cut the running track. It looked as though the track could be added at a later date. The story gets interesting when the designer realizes that they cannot add the track later. They have to add it now or go without forever. The problem now is where to get the \$800,000. In an ironic twist of fate there was about \$850,000 in the Fixtures, Furnishings, and Equipment (FF&E) budget. Alex Accetta, director of Campus Rec, had to make a decision. Should he use the FF&E budget and worry about equipping the building at a later date, or go without a track forever?

He chose to use the FF&E budget. He needed to find another way to fill the building. His solution came in the way of an additional \$2 allocated to the recreation department via the student fees. The strong alliance with the student government, along with the support of the student body, filled the gap.

It's intriguing to wonder what would have happened if the student government wouldn't have allocated the funds. If the money couldn't be found Alex would have been in the line of fire. This highlights the necessary risk-taking ability necessary to be a project manager. In any project there are unforeseen problems. The project manager has to be able to quickly steer the course of the project to overcome the obstacles that arise. Paralysis in these situations can have terminal effects in a project. In this case things turned out well, so it is easy to overlook the magnitude of the decision made.

This scenario highlights an interesting financial aspect. The original budget was \$35 million. This budget has been fixed the entire time. The costs have crept a little, but most of these were in the thousands of dollars, not millions. These were small in the grand scheme. The largest monetary change, adding the running track, was funded via a money shift from the FF&E budget. This may allow the recreation department to say they stayed within the \$35 million dollar budget, but more money was still added to the overall project.

Negotiations

Ultimately the students agreed to pay the extra \$2/quarter to have the running track. That was a concession for them since the \$220/quarter student fee is a fixed income for the student union. Those two extra dollars were taken from another student-funded item.

Since resources are always limited, concessions end up taking on a large portion of the project manager's time. Concessions are the end result of negotiations. This means project managers need to be versed in negotiation skills. The major resource constraint in this project was PSU's fixed \$35 million dollar budget. This constraint led to two noteworthy examples of negotiating.

The first incident involved the cleaning systems for the pool. At one point YGH approached PSU about the cleaning system of the pool. There was only one UV cleaning system for the pool, but due to the size of the pool there needed to be two. PSU stood their ground claiming the \$35 million dollar prevented them from adding the extra the filter. They budgeted for one so that was all they would pay for. The designer chose to add the \$50,000 cleaning unit rather than design a pool without adequate cleaning capabilities. This illustrates a win for PSU in large part because they had the ability to claim the \$35 million constraint as a limiting factor for them.

In the second incident the tables were turned. PSU realized there would be a column between the two basketball courts. The location meant both gyms couldn't be used as one at the same time. PSU pushed hard to have the designer fix this. The designer pointed out that PSU had signed off on the schematics with the column in the design. PSU still wanted the column out so YGH informed PSU that re-evaluating the design would cost approximately \$20,000, and that estimates on fixing the problem could go as high as \$1.5 million.

This time it was PSU that had to swerve. The designer was not going to redesign part of the building and lose the \$1.5 million. PSU had no money to negotiate with on the price

so they had to accept the current design. Here the lack of additional funds took away the ability to fix the mistake they made.

While these two negotiations are large, there are many small negotiations that go on every day. This is largely due to the design – build versus design-bid-build process. Not having all the details of the design complete before building necessitated many spur of the moment changes. All of these changes need to be controlled through a change order process. This is the origin of many negotiating topics.

Lessons Learned

Verification

According to Mr. Accetta, the biggest lesson learned from all of this is, “Don’t trust anything, and verify everything.” He assumed the designers knew more details about recreation center design than was true. In specific he cited the pool depth and basketball lines as items he thought would come more naturally through the design team. The fact that the designers had the same feeling towards PSU highlights the need for careful planning, and shows the potential pitfalls with the design-bid process.

Planning Importance

Planning is often thought of as a necessary evil. This project was in the planning stage for 4.5 years before working on the design. In comparison the design only took 6 weeks. Even with 4.5 years of planning items like the pool depth remained that ultimately had major ramifications on the design and negotiations later in the building phase. This establishes a link between accurate planning and negotiations. The moral of the story being, the better the planning, the fewer negotiations needed.

Verification Diligence

Not all snafus are due to a lack of planning though. In the case of the extra column between the basket ball courts this was a case of overlooking an element that while technically fine, was not desired. The onus on this one falls on those in the review

process. Reviewing is a difficult task that requires the correct mentality. Some people are naturally better at this than others.

Part of the project manager's job is finding the appropriate reviews, and ultimately signing off on the job. Unless the project manager was a reviewer he/she needs to trust the advice of the person/s assigned to the reviewing task. There is a good deal of stress involved in decision since if the design is flawed it is the project manager responsible.

Decision-making

The high-stress level comes with being the ultimate decision-maker on many aspects of the project. The ability to make decisions under stress is an important attribute in successful project managers. The running track is a good example of the importance of being the decision-maker. Mr. Accetta could have sent out student surveys trying to get an idea, but there wouldn't have been a consensus. In the end he still would have to make a decision on his own knowing some people would not be happy with the decision.

This does not mean the project manager operates in a vacuum. It is very important that the project manager has a core group of advisors to discuss ideas with. This helps to explore options in a more unbiased yet manageable way. This was especially important in this project.

Delays

It is clear that the design-build process led to more negotiations and concessions. The higher the number of negotiations, the harder it is to get everyone involved. Time is a constraint. The need for a quick meeting with 3-5 key advisors allows the project team to be nimble enough to avoid costly delays.

The adage, "Time is money" is still valid. The rising price of steel is a vivid example of the cost associated with delay. It is easy to make the case that the real estate boom and subsequent rise in steel prices was an unforeseen event that was impossible to plan for, but the reality of project management is that unforeseen events happen all the time. The wise project manager understands this and looks to minimize problems, such as possible delays, wherever possible.

Cross-functional Teams

Next, cross-functional teams played a rich role in the successful outcome of this project. It is impossible to complete a project of this magnitude without layers of different cross-functional teams working seamlessly. To complete the project members from the University, State, City, design, and construction teams had to collaborate at different stages during the development.

Within the University there were different departments working with each other. The recreation department was involved leading the project. The Chancellor's office took a part in securing part of the building for its use. The student government was involved voicing the concerns and support of the student body.

The designer and construction team had their own hierarchies complete with project managers and subcontractors. A common element among all the project managers was a need to work efficiently across platforms with other groups. To illustrate the importance of cross-functional interaction, representatives from the City, PSU, the designer and the builder still have meetings once a week.

Mission

PSU is thought of primarily as a commuter school. PSU wants to change this image. One way to do this is to improve graduation rates. The University points out that class attendance correlates well with graduation rates. If students attend class they are more likely to receive a degree. Currently if a student has a class in the morning and afternoon a student may skip the afternoon class. The hope is that locations like the new recreation center will attract students and hold them on campus long enough for them to go to the afternoon class. It is important to realize that while the recreation department had many reasons for justifying a new recreation center, the fact that they could tie the recreation center into a larger University mission helped make the recreation center a reality.

Conclusion

The conducted report clearly shows that a systematic approach to project management is essential to ensure success. Projects have to be embedded within a global overall strategy (in this case PSU's long-term goals). Furthermore, their role within an organization has to define, along with formal authority and responsibilities. All three project's goals (cost, quality, time) have to be fulfilled in order to be successful (in this case the focus strongly lied on cost).

During the project's life, various methods are used starting with profitability methods at the beginning in order to decide whether to actually start the project or not and ending with immense Gantt charts show the complex relationships between the many tasks.

The importance of the project manager and his team is emphasized given the fact that the new Rec center was part of a huge collaboration between many different stakeholders.

No project goes completely smoothly from the beginning to end, and so did this. However, the project's management always had the right answer and managed to be successful given the strict (cost) constraints while still being willing to learn from mistakes made and challenge themselves.

Even though the project is not done yet, one can be sure that this project is to be considered a huge success from the project management perspective.

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Appendix A

<u>PCAT Redevelopment, Phase I</u>	
<u>Student Recreation Center:</u>	
Article XI-F(I) Bond Authority	
Student Recreation & Building Fees	\$35,000,000
<u>Retail Space: First Floor:</u>	
Article XI-F(I) Bond Authority	
Lease Revenues	\$7,000,000
<u>Classroom/Chancellor's Office Floor:</u>	
Chancellor's Fund Balance Funds	\$3,000,000
Chancellor's Short-term Loan	\$3,000,000
Additional Funds:	
City of Portland	\$2,000,000
Other Sources	
Legal Settlement,	
Energy Tax Credits & other	<u>\$1,000,000</u>
Total Project, Phase 1	\$51,000,000
<u>PCAT Redevelopment, Phase II (Proposed for 2007-2009)</u>	
Academic Program space	
Article XI-G Bond Authority	\$10,000,000
Match:	
Gifts GSSW/SBA	<u>\$20,000,000</u>
Total Project, Phase II	\$30,000,000