Report on Building

March, 2018

“1897, campus from Stone Hill”

2018, campus from Stone Hill
Why We Build

President James A. Garfield defined the ideal college as "Mark Hopkins on one end of a log and a student on the other." That familiar saying still captures the essence of what happens at Williams today – a small number of dedicated faculty mentor a small number of talented students.

Today’s 337 faculty1 are the intellectual descendants of Mark Hopkins. And today’s students still hold down their end of the proverbial log. But what do we make of “the log” itself in Garfield’s aphorism?

Today’s “log” is the physical infrastructure that promotes the kind of faculty/student interaction that Hopkins idealized then, and that we deliver today. Put simply, “the log” is our buildings -- the spaces that allow us to deliver a world-class college experience.

The 21st century equivalent of the log includes seminar rooms, libraries, state-of-the-art laboratories, performance halls, and faculty offices. It also includes a health center, an athletics complex, a sustainability center, a museum, and of course dorms and student dining facilities. As the college has developed, “the log” has become bigger, more complex, and more expensive, but it is still doing what it has always done: supporting the close interaction of faculty with students that is the hallmark of a Williams College education.

Buildings also tend to be among the most important, and controversial, decisions we make. They require large and irreversible commitments of money, time, and space. They must respond to our immediate needs and values but also be flexible enough to be useful to Williams 30, 50, even 100 years from now. Conversations about buildings often evoke personal opinions about programming and architecture, which can be, let’s just say, subjective, variable, and passionately-held.

The purpose of this report is to explain how the college thinks about building. How do we decide if and when to build a new building? What makes one building project happen before another? How do we maintain all our buildings? Why is it so expensive to build around here? And how do we pay for it all?

The goal of this report is not to explain or defend any particular building decision, but simply to ensure that we all share the same understanding of the process the college uses to decide when to invest in buildings. In that spirit, we hope this report is a useful starting point for future conversations about building on campus.

Buildings are an irreversible decision, so it is important that we get them right

We do not take lightly the decision to build something new on campus. A new building means a sizeable one-time expenditure of money, a large commitment of time by specialized staff, and (often) a net addition of square feet that we’ll need to heat and maintain into the future. Buildings represent some of the most durable decisions we make as an institution.

Once a building is built it will likely be there for a lifetime (or more). And no matter how expensive it was to build, its resale value is probably zero. No one is going to buy our buildings from us. Who would buy a library? Or a science center? Their value to us is only in their ability to better enable us to fulfill our educational mission. So, when we decide to put money into a building it is money that we will never

1 See Provost’s website for a detailed report on staffing at the college.
get back. It is money we cannot use for any other purpose. And if our endowment drops we cannot unwind our physical infrastructure to raise funds.

So we think carefully about new buildings: whether there are other options, how to design them for the programs they’ll contain while making sure they are flexible enough to last, how we’ll maintain them, how sustainable they are, and how we’ll finance them. This report will explain how we approach these questions.

**Our buildings over time**

Some of our earliest buildings are still in use. For example, West College (1793), Griffin Hall (1828), Lawrence Hall (1846), and Morgan Hall (1882) are all heavily-programmed buildings with plenty of life left in them. Their condition today is due to the reinvestments that previous generations of college stewards have made in them over the decades.

The campus has evolved dramatically since the college was founded in 1793. We have built things that Mark Hopkins never would have imagined. We offer things like centralized student dining facilities, a career counseling office, and a daycare center. Over time these things came to be expected by students and faculty. As new needs arose we met them if resource constraints allowed.

The current students, faculty, and staff are the beneficiaries of all those past decisions to build. For example, adding Spencer Art in 1995 created a separate structure for the study and practice of art close to Lawrence and WCMA. But it was controversial at the time because it required the removal of a historic local landmark -- the Opera House. Few students and faculty today would argue that Spencer Art has not been a worthwhile addition to the College’s portfolio of academic buildings.

Historians and map-lovers may be amused to compare the six maps of the campus, drawn over a period of almost 125 years, that are included in this report’s appendix and illustrate the chronology of campus buildings. The earliest map (1893) lists 57 buildings (ten of which are fraternities and twenty of which

---

2 With thanks to Katie Nash, College Archivist and Special Collections Librarian, for the maps and the vintage cover photo of the campus taken from Stone Hill. And also to Ralph Lieberman for the juxtaposed 2018 photo of the campus taken from the same spot on Stone Hill.
are the private homes of professors!). The most recent map (2017) lists 122 campus sites (but no fraternities and no professors’ homes).

Our buildings relative to peers

Evolving student and faculty expectations is not a Williams-specific phenomenon. We exist within a universe of peer colleges that compete for both students and faculty. This competitive environment contributes to the increasing expectations of those groups. The chart below shows how Williams compares on the metric of “square feet per student” to its peer liberal arts colleges. Compared to other liberal arts colleges Williams has the most space per student.

Over 1,300 sf per student sounds like a lot. It is both absolutely high (most of us have lived in houses and apartments smaller than 1,300sf), and it is high relative to our peers. Data like these cause us to look increasingly critically at pleas for new net growth.

While the peer names are masked due to confidentiality agreements, it is interesting to note that the colleges on the left-hand side of the chart (i.e. those with the most space per student) are also the most well-endowed peer colleges. This supports a theory that higher expectations, along with the means to address those expectations, result in high relative amounts of physical space.

Additionally, we know that, relative to our peers, Williams has invested more in new space as opposed to intensely renovating old space. To an extent, new construction and intense renovation are substitutes. There are pros and cons to each strategy. No “pure” approach would be optimal. That is, a college that ONLY demolished old buildings and built new ones in their place would always be wasting perfectly serviceable assets. Likewise, a college that never built new but ALWAYS tried to extend the lives of its existing buildings would also be inefficient, pouring money into assets that are harder and harder to justify. There exists an optimal mix of these strategies that we strive to find and achieve.
We make three types of investment in buildings

The college’s approach to capital investment (i.e. building new and fixing old buildings) is similar to how a homeowner makes decisions about investing in his or her home.

Like a typical homeowner’s, the college’s investment in its buildings comes in three flavors:

- **Annual maintenance** (known at the college as “annuals”). This includes things like painting, patching a roof, replacing worn out furniture, or making minor renovations for ADA compliance. At Williams the typical project in this category costs less than $50,000. In total we spend about $3.5-4.0 million per year on annuals to maintain our ~185³ buildings (containing ~3 million square feet).

- **Capital renewal** (known as “renewals”). These tend to be bigger projects, typically having budgets greater than $50,000 but falling short of gut renovations or new construction. Examples would include replacing a roof, renovating an elevator, or building a small addition. In total we spend about $7.5-9.0 million on renewals each year.

  Recent examples of renewal projects include replacing the roof of Chapin Hall ($500K), upgrading the JRC ($153K), and improving accessibility in Doughty dorm ($800K).

- **Major capital investment** – more commonly known as “new buildings” or “gut renovations.” These are big projects where we either build something brand new or transform an existing building through massive renovation. These tend to be high-profile projects and they get the most critical attention on campus. Recent completed examples include building Horn Hall ($12.5M), renovating the Log (4.6M), transforming Weston Hall into the new home of admission and financial aid ($12.3M), and, of course, building the new science center. How much we spend on major capital projects can vary greatly from year to year based on our need and on the financial constraints we face at the time.

³ There is some interpretation here. For example, are the Thompson labs three buildings or are they one because they are all connected from behind by a fourth building, Morley? Here all four named buildings are counted as separate buildings.
Maintaining our buildings is a good investment...

As with your home, small investments in repairs and preventative maintenance usually pay off by preventing or at least delaying more expensive repairs. Patching a roof (an “annual”) delays the inevitable roof replacement (a “renewal”). And replacing a roof (a “renewal”) delays the day when you might have to build a new house (a “major capital investment”).

Keeping our buildings in good condition acts like a bank. When times are good we invest in our buildings through renewals. We are then prepared, during an economic downturn, to cut back on renewal spending because we know that our buildings can weather a few years without reinvestment. Indeed, this is a key dial we turned in response to the 2008 economic downturn. We chose to direct dollars away from capital renewal and new buildings and towards areas of the college that were higher priorities – areas closer to the central mission of the college like faculty salaries and financial aid. Choosing, in effect, to protect Mark Hopkins and his student and to sacrifice, temporarily, the log.

This “bank” can only be drawn on for a short period of time. Eventually buildings show signs of neglect and you have to start reinvesting in them or risk more expensive repairs down the road. Indeed, choosing to tap this particular bank creates a backlog of “deferred maintenance” that takes several years of above-average capital renewal spending to climb out of. We are experiencing that right now. Some of our current “building boom” is attributable to our need to address the deferred maintenance that we allowed to accrue during the economic downturn when we turned off renewal spending to protect more mission-critical parts of the college. For example, during the downturn we slowed the pace of investment in dorm renovations. Indeed, we have not overhauled a dorm since we did Morgan in 2006. Predictably, we are now seeing the results -- we have a backlog of work to do fixing up our dorms. Additionally, some of our “newer” buildings built in the 1990s, like Spencer Art and CTD, are beginning to show signs of needing refreshing.

To return to the homeowner analogy: sometimes an individual will experience an economic shock, like losing their job. In response they might choose to delay a planned home improvement. For example, they might hold off on replacing the roof in order to meet higher-order needs like paying the mortgage and putting food on the table. Later, when their economic condition improves, they will be able to turn their attention back to the roof. But by then the project might have become more expensive due to accumulated deterioration and inflation.
...but not every building is worth investing in

A house can sometimes be an unsalvageable money pit. In this case, starting over by building new can actually be more cost-effective than throwing good money (through annuals and renewals) at an old building’s ever-more-costly problems. Every house has a lifespan and you don’t want to be the last owner of a house if you can help it.

We don’t have that luxury. Williams College lives forever and we never sell buildings. So on a campus with about 185 buildings there will always be some that are approaching the end of their useful life. About 12% of our gross square footage is in buildings with renovation ages over 50 years old. That means that even after all the annual maintenance and periodic renewals that we have done to keep them serviceable they are at very high risk of major system failures. When a building reaches that stage of its life it usually triggers a discussion about whether another renovation makes sense or whether it would be more cost-effective to build new.

A good current example of this is Garfield dorm. Built in 1850, Garfield has reached the end of its life. We are faced with two expensive choices: do a major gut renovation, or tear it down and replace it. Last year a committee weighed both options. They determined that it would cost more to bring Garfield up to code and to college standards than it would to build a new dorm on the same site.

But cost alone does not determine whether we build new. There are other considerations beside cost, including, for example,

- A building’s architectural significance
- A building’s historical significance
- The potential to achieve significant reductions in energy use
- Whether a renovation, no matter the cost, can make the building accommodate its expected future programming

---

4 See Hanks, Tom and Long, Shelley. 1986 film
5 The concept of renovation age is different from actual age. A building could have been built 100 years ago but due to maintenance and system upgrades have a renovation age of 30. For example, Agard dorm was built in 1920 but thanks to the care it has received over the past century has a renovation age of 25 years.
What other considerations go into a decision to build new? How does a building get on “the list”?

The casual observer might think that buildings just spring up on campus. It can be unsettling to wake up one day to find a hole in the ground where an old building used to be. But buildings don’t just spring up. The planning process that leads to a new building (or a major renovation) tends to be long – usually years long. And on a campus of our size, there are typically several projects under active consideration and several more just over the horizon.

The chart on the right shows some the recently completed projects since 2009 as well as the projects currently under construction and three being considered. Taken together they represent $590 million worth of capital investment in physical space. Sawyer and its quad (including Hollander and Schapiro) plus the new science center make up 60% of the total cost.
There are six major steps between the inception of the mere idea for a new building and the time when the College will actually put a shovel in the ground. Each will be explained fully below. Importantly, the college is not committed to actually start construction until all steps are completed. We reserve the right to pull the plug at any time. And indeed we have pulled the plug before. For example, the new Sawyer Library was a “shovel-ready” project in 2007. But we shelved the project until 2011 as one response to the financial crisis. Another recent example is the well-developed idea for a new arts facility that is currently on hold for a variety of reasons including the inability to find consensus around design and siting and also uncertainty about financing such a large project at this time. The need, however, has not gone away. If we can arrive at a consensus view of the project and secure financing, it is possible that we will revive the project in the coming years.

Step 0: The idea

Williams is blessed with innovative faculty and staff who are full of great ideas on how to improve their department or program’s ability to do its work. Coming up with an idea is the easy part.

It is almost always the case that the desire for new (or better) space arises from the people most familiar with that space. Sometimes it is professionals on our Facilities staff, including our custodians, who notice a building’s mounting deficiencies and raise the alarm that a building might be nearing the end of its life or is simply becoming cost-ineffective to maintain. For example, if we observe that a
specific dorm is the source of a disproportionate number of work-orders relative to the number of beds it supplies students we’d consider that dorm to be a resource hog, costing us an inordinate amount of time and money relative to the service it provides, and it would be a contender for major work.

Often it is the faculty and staff occupants of a building that notice its deficiencies. The building may begin to compromise their ability to deliver their program. For example, the health center has long felt that their building’s site, size, and layout is a hindrance to their ability to deliver services to students. When faculty and staff start to complain that their building is limiting their ability to do their jobs we pay attention. For this reason, last year, we authorized that Hewat House (directly across the street from the health center) be remodeled and repurposed from faculty/staff apartments to a dedicated mental health services facility.

Williams aspires to provide a physical environment that best supports our ambitious faculty and staff. Sometimes a program outgrows its space (e.g. the health center providing mental health services to more and more students). In other cases, the pressure comes from unanticipated growth in enrollments (e.g. computer science). And every year brings ideas for new curricular (e.g. statistics), co-curricular (e.g. CliA), and extracurricular (e.g. indoor tennis) directions that make legitimate claims for new or improved space. Suffice it to say that almost every conversation about new construction is catalyzed by faculty and staff making the case that they require more (or better-suited) space to field their valued program.

**Step 1: CPR considers the idea**

Of course it stands to reason that the primary users of a building will be the first to notice its deficiencies and will be the strongest advocates for a new building or major renovation. We would not be good stewards of limited resources if we green-lighted every request for improved space by the most self-interested parties. The proposed investment must be judged to be better than the next best option for those limited dollars. That means we need to undertake a process to critically examine every request for space -- to consider how it would further the college’s overall mission and to consider it in light of limited resources and competing needs.

If the idea for a new building is compelling enough then the Senior Staff person in charge of that area may bring it to the Committee on Priorities & Resources (CPR) for discussion. The purpose of this early conversation with CPR is to decide whether the idea is worth pursuing further in the context of all the other competing uses of college resources. CPR is the standing committee in the best position to evaluate those trade-offs. There might be a compelling need for a new building to house program X, but it might be less compelling than a competing use for those same funds like investing more in financial aid or in faculty research support.

CPR is a gatekeeper of college resources – both time and money. If CPR decides that a building idea, as good as it may be, is NOT better than competing uses for those same resources then they can effectively kill (or at least shelve) a building project idea at this early stage. It is far better to come to that conclusion early in the process before significant time and money is spent in pursuit of a non-competitive idea.

But if, on the other hand, CPR is convinced that the idea has merit then they will give permission to take it to the next step of the process. This is NOT a greenlight for construction. It simply moves the idea to step #2.
Step 2: Identify and prove the need

In Step #2 the proponents engage in more involved forms of due diligence. These include:

**Program review**

Whenever there is a new proposal for a major capital investment, like a new building, we conduct a systematic program review to demonstrate the need for that investment. A program review involves all the relevant stakeholders (faculty, staff, and students) and should answer the following questions:

- How does your program fit into the college’s overall mission?
- What is the demand for your program?
- Do peer colleges have similar programs? Why or why not? How do we compare?
- How does your current space affect your ability to field your program?
- What would happen if we did NOT make a major capital investment?
- What alternatives do we have?
- What other parts of the college are affected by your program?
- What is the aesthetic, historic, or nostalgic value of your current building or space?
- What is the future likely to bring? Is the program going to grow? Shrink?
- What is your recommendation for new or improved space for your program?

**Building condition assessment**

A program review is about the program and its needs. A building condition assessment is about identifying a specific structure’s physical deficiencies and how much they would cost to fix.

Building condition assessments are informed by things like:

- The work order system. Every time someone places a work order to fix something we track it. We know, for example, how many work orders have been placed to fix pipes in Dodd house. We can use these data to notice changes in both the number and severity of work orders by building over time. When we start to see a building collecting an inordinate amount of work orders, or increasingly severe problems, it is a more-likely candidate for a major capital investment.
- Building information systems that track energy use. There are over 7,000 digital control points on campus that track energy use by building. We use these systems to identify buildings that are energy hogs. We can also identify HVAC systems that are failing or likely to fail. When we notice that a given building is using more energy per square foot than similar buildings it is a more-likely candidate for a major capital investment.
- Sightlines analysis: Sightlines, a Facilities Management consultancy, annually assesses our buildings and provides peer benchmark comparisons. Sightlines compiles, for each of our buildings, statistics like:
  - Estimated “renovation age” -- a building’s effective age, which is usually younger than the year it was originally built due to renovations and ongoing annual maintenance
  - The amount of accumulated deferred maintenance (how much it would cost to bring a building up to code and college standards)
  - Custodial labor per square foot (the cost to maintain it on a daily basis)
  - Utility costs per square foot (how energy-efficient it is)
  - Code compliance issues, including accessibility, that we are required to fix
Our sustainability goals. We analyze the embodied carbon of potential scenarios so we can include that in our decision-making as it might strongly suggest NOT building something new or of renovating rather than doing new construction.

Lastly, the information we obtain from our own professional Facilities staff. This starts with front-line personnel like the custodians assigned to each building. Our custodians know their buildings from top to bottom and they are attentive to the ways buildings begin to fail over time.

A building conditions assessment, taken with a program review, provides CPR and Senior Staff the information they need to make a decision about whether a specific program in a specific building has presented a strong case for a major capital investment. A “strong case” means the expenditure of dollars towards the project would be as good a use (or better) of those dollars than the next-best use of those dollars. That is a high hurdle, especially given that it always competes with potential uses as compelling as “invest more in faculty” and “invest more in financial aid.”

If by the end of this step CPR and Senior Staff are convinced of the need for a building project then that project gets on “the list” of approved projects and moves to the next step. It is important to note that being on the list does NOT mean the project will be built. There are four more steps before a shovel hits the ground.

**Step 3: Prepare specifications**

Step #3 sees the formation of a building committee made up of faculty, staff, and sometimes students (depending on the nature of the building/program). The building committee should also have members from outside the program or department that stands to benefit most from the project. Additionally, for at least the last ten years, the Director of the Zilkha Center has been a member of every major building committee. This ensures that concerns about energy use and environmental sustainability are raised and represented. Building committees are assisted by professional Facilities staff from the Design & Construction and Operations teams.

The purpose of the building committee is to:

- Articulate clearly the present and future program needs
- Advise the architect on building function and performance expectations
- Ensure that sustainability goals are considered
- Be sensitive to required adjacencies and unintended consequences of location
- Be alert to aesthetic, historic, or nostalgic value of the spaces/locations under consideration

For most recent major building projects this stage has also included one or more campus-wide fora designed to communicate the status of a project and to seek feedback from relevant stakeholders not directly represented on the building committee. Recent examples include:

- the public forum for the new Williams Inn during which numerous Spring Street merchants provided input (moderated by Jim Kolesar),
- several fora for the new Science Center (moderated by Professor Tiku Majumder),
- and several fora for the ARTS project (moderated by former Provost Will Dudley, Dean of the Faculty Denise Buell, and Provost Dukes Love).
Step 4: Design

Design is done in collaboration with the respective building committee and can happen in parallel with Step #3. In practice most of our recent major capital projects have employed an external architect to do the actual design. Engaging an architect is a competitive process that considers the firm’s relevant experience, the senior team that will lead the project, and the price. We tend to engage firms with proven experience designing similar buildings on other campuses. For example, when seeking an architect to design the science complex we narrowed the field down rather quickly to firms with experience designing laboratories, health centers, hospitals, and similar science-intensive buildings. We ultimately hired Payette -- a firm that had designed the science buildings at Amherst, Northeastern, and Tufts.

One innovation within the last decade is the creation of an internal Design Review Committee to ensure that new building harmonize with the rest of the campus. The DRC includes three faculty from the art department (currently EJ Johnson, Amos Lawrence Professor of Art, Marc Gotlieb, Director of the Grad Art Program and Class of 1955 Memorial Professor of Art, and Michael Lewis, Faison-Pierson-Stoddard Professor of Art History), plus professional staff from Planning, Design, and Construction, and one member of senior staff (currently Vice President for Campus Life, Steve Klass).

The DRC advises the architect about the features of their proposed design, specifically focusing on the exterior façade that, in their opinion, do or don’t complement the surrounding structures and overall campus aesthetic. For example, the DRC pushed back on the initial designs for the new college bookstore on Spring Street, suggesting that the design be more in keeping with the style of brick buildings on the street while still depicting a design of its time. The DRC also pushed back on the initial design for the North building of the new science center -- advising against a stone façade and a pitched roof.

By the end of Step #4 we have a completed architectural design that has been vetted by the internal Design Review Committee. That is an important hurdle because the next step, financing, is very difficult without a design. Understandably, most large donors like to see a picture of what their generous gift will make possible.
Step 5: Financing

By this step a potential capital project has proven its need, has had its specifications hashed out in the building committee process, and has a complete architectural design. The only thing left to do is figure out a way to pay for it.

We pay for new buildings in three ways:

1. through gifts (philanthropy),
2. by issuing debt, or
3. by paying for it directly out of the endowment (i.e. from savings).

Each method has its merits (discussed below) and in practice many projects are financed through a blend of the three methods. The chart below shows the funding source for all the major projects we’ve done in the past decade (including several under construction now, and a few that are just on the horizon). It comes to $590 million in construction undertaken or under consideration. 43% of that has been gift-funded and an equal amount has been debt-financed. 14% has been funded directly by the endowment.

**Completed, Active, and Planned Capital Projects**

Sources of Funding

![Pie chart showing sources of funding]

- **$251 million (43%) in debt funding**
- **$255 million (43%) in gift funding**
- **$84 million (14%) in endowment funding**

Total $590 million
When it comes to paying for new buildings we prefer gifts. We are fortunate to have alumni who love Williams and who get excited by giving back. Some alumni even love Williams enough to give a building! We are also fortunate to have a Development Office that is skilled at matching these potential donors with gift opportunities that inspire them.

Most of our building projects have philanthropic potential – meaning that they are attractive to potential donors. Examples of building projects that generate donor interest include things like dorms, academic buildings (e.g. classrooms, laboratories, library), and athletic facilities. These tend to be the things that were most dear to alumni when they were students.

Unfortunately, some things we need to build will never generate donor interest. These are the unglamorous things associated with supporting the teaching and residential environment that students (and thus alumni) experience. Things like dining halls, a daycare center, and parking lots. A good current example is the storm water infrastructure project underway at the bottom of Spring Street. It has zero donor appeal. No one wants to put their name on a concrete pipe that will be buried 30’ underground.6

It is important to note that the kinds of gifts we seek for major capital projects are the ones that don’t “crowd out” gifts for unrestricted purposes or for financial aid. This is an important challenge for the Development Office. They need to identify donors whose sole or strongest motivation is the support of the building project that has been approved. That is, we do not want a potential $10 million donor to give a new dorm if they would have, just as happily, given that same amount to financial aid or professorships. Put simply, we do not want buildings to cannibalize unrestricted gifts.7

In more recent years, we have brought more discipline to gift-financing major capital projects. Every building project has a goal for philanthropy. Between 50%-100% of its price tag. And we will not proceed with the project until that goal is reasonably assured to be met.

A good example of this discipline in action is the renovation of Chapin Hall. We approved, and even designed, a project to massively renovate the interior of Chapin Hall. But we could not raise enough money to cover the cost through gifts. So we separated the project into phases, holding off on the last phase until we could support it via philanthropy.

Debt

Some projects are so big (e.g. the science center) that it is unrealistic to expect any single donor or even a small group of donors to give the entire amount. Meanwhile, some projects are so unglamorous (e.g. the storm water pipe mentioned above) that they generate limited donor interest. In those cases we might have to issue debt.

As a tax-exempt non-profit Williams College can issue tax-exempt debt when it plans to use that money to further its educational purpose. Projects that would qualify for tax-exempt debt include things we

---

6 But if you know of someone who might, please contact Megan Morey at x4217
7 Financial aid and professorships count as “unrestricted” because we have an (almost) unlimited appetite for more support for student financial aid and more support for teaching.
commonly associate with the core activities of a residential college – dorms, classrooms, labs, offices, libraries, athletic fields, etc.

This past decade has been an incredible time to be a borrower. We continue to experience historically low interest rates. The chart at right depicts an index\(^8\) that is a proxy for the type of tax-exempt debt that we issue as a nonprofit college. Recent rates are at all-time lows.

How low? In 2017, we issued 30-year fixed rate debt to finance several projects including the storm water project. These bonds have an interest rate of 3.32%. At that time, we also refinanced $50 million in previously issued debt. In that instance, we secured a 30-year variable rate bank loan and entered into a variable-to-fixed rate swap to obtain a synthetically-fixed rate interest rate of 1.78% for 30 years.

Just like when a homeowner refinances a mortgage, we get hit with non-trivial fixed costs every time we issue new debt. So we try not to do it too often. When we do issue debt we like to issue enough to make it worth the fixed cost. So we time our debt issuances to coincide with major building projects that we know are coming.

The chart at left shows four recent debt issuances and the construction projects that they helped finance.

---

\(^8\) The Bond Buyer 20-Bond GO Index is based on an average of certain general obligation municipal bonds maturing in 20 years and having an average rating equivalent of Moody’s Aa2 and Standard & Poor’s AA.
Financing new construction with debt creates an ongoing annual obligation in the form of debt service (interest and principal) payments. That raises the question, “how much debt is too much debt?” Williams currently pays about $25 million per year in debt service. Those obligatory annual payments compete with every other thing we might want to do with that money. So we do not take on new debt lightly. Our goal is to keep our debt-to-budget ratio below 10%.

The policy of requiring significant philanthropy (50-100%) for most projects has allowed us to keep the debt ratio fairly constant over the last six years, even while the pace of new construction has been fairly rapid. Lacking that discipline, and assuming the same level of construction, our ratio would be closer to 20%.

We feel that this amount of debt is manageable. Right now we are slightly above that 10% target but as we pay down principal (and as the annual budget increases) every year we expect the ratio to decrease (and stay) below our 10% target very soon.

That 10% cap is our comfort level. That said, all debt carries risk because your payments are fixed but your ability to pay can vary. A homeowner’s mortgage is the same every month but there is always a risk he will suffer an income shock like losing his job. In our case our ability to pay is linked to the success of our endowment. If we experienced a financial crisis that reduced our ability to draw from the endowment we might be forced to decrease our annual budget. In that situation our debt service to budget ratio might actually increase beyond our 10% comfort level.

So why 10%? Is that too aggressive? Well, there is no hard and fast rule. Indeed, different peers have different ratios of debt service to operating expense. Amherst and Swarthmore, for example, have ratios in excess of 10%. Having a higher ratio exposes you to more market risk. But having a lower ratio might

---

9 The 8.3% ratio in this chart for Williams does not match the 9.5% ratio (FY16) in the chart immediately before it because the peer data use “GAAP operating expenses” as the denominator in the ratio while the longitudinal chart...
mean that you are not taking advantage of the very favorable current lending environment to renew your campus.

*Endowment*

The third, and least common, way might pay for a capital project is to take money right out of the endowment. Kind of like a homeowner saving up for a bathroom renovation and paying in cash. We might choose to do this if the proposed project is deemed important enough, and we have tapped out all potential donors, and we do not wish to take on any more debt. The science center is a good example. It is such an expensive undertaking (~$204M) that we will finance it using all three strategies: $100M (49%) in philanthropy, $70M (34%) in debt, and $34M (17%) from the endowment.

The new Williams Inn project is another example of an endowment-financed project. Because the Inn is not an educational purpose we cannot issue tax-exempt debt to finance it. We’d end up paying a higher interest rate if we chose to debt-finance it. So instead we chose to finance it out of the endowment. Because the Inn is a profit-making venture it will act like an income-producing investment. Essentially it becomes a real-estate investment held by the endowment. In a normal up market it is unlikely that the Inn will earn, through its profits, a rate of return equal to the endowments’ benchmark return. Rather, what makes the Inn a worthwhile college investment is the combination of those monetary returns PLUS the social returns to the college and community of having a new, more central, Inn that brings vibrancy to Spring Street and offers predictable lodging to parents, alumni, and other College guests.

**Step 6: CPR and the Trustees greenlight the project via budget approval**

Once a listed project has been fully designed and its financing has been worked out it comes back to CPR one last time as part of the annual capital budgeting conversation. By this time the need for the project is well understood, its design has likely been value-engineered (that is, its costs have been reduced during the design process) and the Development Office has found donors who are moved to support it via philanthropy.

The project competes with all the other great ideas for use of the same resources that come before CPR that year. CPR will vote to recommend a capital budget that may or may not include the proposed project. That budget then gets approved (or not) by the Trustees who bear the ultimate fiduciary responsibility for the college.

In practice, a listed project can be fully designed, with known financing, and can sit “on the list” for many years, never getting the green light from CPR and the Trustees.

**How does a project move to the top of the list? What makes one project a higher priority than another?**

We do not build projects in the order in which they are approved. It is not a first-come first-served system. There are approved projects that sit on the list for years. Quite simply, in a world of limited above uses “budget.” These are similar, but not exactly the same, concepts. In order to get apples-to-apples peer comparisons we must use peers’ operating expenditures (which are public data) not their budgets (which are not public data).

10 But in a down market it is more likely that the Inn will make a positive return.
resources, the highest-priority ideas get funded first. And the college is constantly prioritizing among listed projects. Several things affect the likelihood that a project might move forward promptly.

**Centrality of the program to the college’s mission**

The major capital projects that get prioritized highest are those that benefit programs most central to the mission of the college. That is, that are closest to being the “log” in Mark Hopkins’ ideal college aphorism. CPR asks, “does the program directly support the educational experience of students? Does it support faculty who are delivering that education? Does it support the residential nature of the Williams college experience? Does it support important student co-curriculars?”

Of course every project can make some claim of enhancing the mission of the college. So it is not a question of “if”, but more a question of “how much?” How far a line do you have to draw between this program and the classroom experience? The longer the line, the lower the priority.

Of course the question of centrality is inherently subjective and often depends on where you sit. Different people will make different claims about how central their program is to the mission of the College. This subjectivity is what generates a lot of heat around building projects. A program that seems critical to one person might seem tangential to another. The graphic above is meant to demonstrate a possible ordering.\(^\text{11}\) It implies that, for example, a lab building is more central than a dining hall which is in turn is more central than faculty housing. Does faculty housing facilitate better teaching? Yes, it does -- which is why it is on the list at all. But the effect of more/better faculty housing on the educational outcomes of students is less directly felt than is the effect of more/better labs.

So, one might ask, “how do listed projects with relatively indirect educational impacts ever get built?” Quite simply, when times are especially good we can afford to undertake more listed projects. These tend to be periods of favorable financing options -- like during economic upcycles when donors feel more generous and during periods of low interest rates. At times like those we might choose to move forward on more listed projects.

**Relative Condition of building**

Another way a listed building project moves up the list is its relative condition. A potential building project will get prioritized if it addresses a condition where:

- human health and safety is compromised (e.g. replacing a dorm that is unsafe to occupy)
- a building fails to meet code, with special deference to accessibility
- inaction would be costly (i.e. delay would expose the college to severe financial risk)
- it preserves a building with historic value (e.g. all else equal, renovating West College would be a higher priority than renovating Brooks)

\(^{11}\) NOT meant to reflect actual institutional priorities
Relative energy-efficiency of building

If the energy use index (EUI) of a building shows that it is a waster of energy it will be prioritized above other projects, all other things held equal.

For example, as we plan for future dorm renovations we keep in mind which dorms are the biggest obstacles to us achieving our goal of carbon neutrality by 2020.

Not only do data like these help us determine which dorms need to be targeted for energy efficiency upgrades, they also inform us about the style of dorm that is most efficient. As the chart on the right suggests, bigger dorms tend to be more efficient than our small quaint co-op houses. As we consider whether to renovate dorms or build new we must weigh this fact against the small co-ops’ advantages like their charming coziness.

But we also pay attention to embodied carbon. For example, a lifecycle environmental impact analysis of replacing the four Dodd houses with a concrete and steel constructed large dorm might actually be a net environmental loss – the operating energy may be much less, but the environmental impact of the construction materials and the construction itself might outweigh them.

More favorable financing

Projects that are 100% gift-financed can take priority over debt or endowment-financed ones.

Some may be tempted to read that as saying, “donors drive our building decisions.” But that would be both cynical and incorrect. Remember, by the time we are even talking about financing options every project has been listed by CPR as a project that is worth pursuing on its own merits. We would not build an unlisted building just because someone gave us money for it. But if someone is willing to give us money for something we’ve determined we want, then prioritizing it is a win/win.

Other examples of opportunistic financing might be an ability to take advantage of a period of historically low interest rates (such as we have experienced over the last decade). Also taking advantage of tax-exempt debt. For example, a project for which we can issue tax-exempt debt will be more attractive, all else equal, than one for which we’d have to issue taxable debt.

Why is it so expensive to build? Do we overpay?

Here’s where the recurring analogy to homeownership ceases to apply. The prices we pay for our buildings, even on a per-square-foot basis, are vastly higher than any homeowner would pay. For example, recently-built Horn Hall cost $491 per square foot. How can that be?
For one, Williams College must build to a much stricter commercial building code than any of us are used to as individuals. For example, all college buildings, as public spaces, must be fully sprinklered to meet fire code. They must also be fully accessible to the disabled which means elevators, ramps, wider doors, hallways, and landings. If we build a dorm with a kitchen it must be built to commercial standards. That means commercial-grade appliances, flooring, counters, and fire suppression.

On top of those code-based standards, we self-impose additional standards that increase our own costs. For example, we choose to build to a LEED Gold standard at a minimum. High performance building might add 5% or more to construction costs vs. a comparable non-LEED building. Another example: we built an expensive kitchen into Horn Hall because students wanted the ability to cook and congregate in such a space. Most colleges with comprehensive dining programs like ours would not have gone to such an expense. Lastly, we build to higher standards because our buildings take more abuse than most. If you have ever lived with a teenager you know how hard they can be on your walls and fixtures. Now imagine having 2,000 of them under your roof.

Another driver of cost is our willingness to entertain change-orders late into projects. Building committees and potential occupants sometimes make changes to projects as they are being built. These requests almost always have some compelling programmatic rationale. They cost a lot to accommodate but because they reflect some meaningful improvement to the program they often get OK’d.

Lastly, our rural location increases our costs. There are relatively few contractors who are capable of doing the scale and quality of work that Williams demands. That lack of local supply drives up price. And we are our own worst enemy by, essentially, competing with ourselves during periods of intense building. In order to meet deadlines we sometimes ask contractors to do more with their limited resources. That usually means we pay extra for overtime or to add 2nd and 3rd shifts. And in order to minimize campus disruption we often ask contractors to take other costly steps like starting later in the morning or forcing workers to park well offsite so as not to compete for parking with faculty, staff, townspeople, and visitors to campus.

Also, sometimes large regional projects can impact our costs. For example, there are currently two large high schools under construction in Berkshire County as well as the MGM project in Springfield. These projects compete for some important tradespeople.

There is some evidence that we are paying more than we used to. For example, Horn Hall cost about $198,000 per bed to build. Compare that to Mission Park (built in 1971) that cost about $104,000 per bed in today’s dollars. Or Prospect Hall (built in 1962) that cost about $98,000 per bed in today’s dollars. Certainly Mission and Prospect were good dorms when they were built and remain good dorms today. However, many things have changed in the past forty years. These include stricter building
codes, more sophisticated mechanical systems, attention to energy-efficiency\textsuperscript{12}, and higher student expectations. Horn Hall reflects the increased cost of these things.

That said, there is also evidence that we are not overpaying relative to our similarly-resourced peers. Peer colleges that have built dorms recently report paying between $155,000 and $319,000 per bed. Horn Hall, at $198,000 per bed, is well within this range.

\textbf{Conclusion}

It feels like Williams is in the midst of a building boom. We have built several major buildings and are working on several more. The inconvenience associated with construction -- like navigating giant holes in the ground, disrupted parking, and the beep-beep of heavy equipment -- raises reasonable questions about how we go about deciding what and when to build.

While there will inevitably be differences in the way people prioritize building projects it is crucial that we all start with a shared understanding of how capital projects come to be, how they are prioritized, and how they are paid for. In that spirit, we hope this report serves as a useful starting point for the ongoing discussion about building at the college.

\begin{tabular}{|l|c|}
\hline
Peer College & Reported Price/Bed of New Dorm Construction \\
\hline Peer College (2006) & \$319,329 \\
Peer College (2004) & \$305,909 \\
Peer College (2008) & \$285,238 \\
Peer College (2004) & \$233,467 \\
Horn Hall (2017) & \$198,000 \\
Peer College (2016) & \$175,625 \\
Peer College (2008) & \$159,202 \\
Peer College (2015) & \$155,274 \\
\hline
\end{tabular}

\textsuperscript{12} Fun fact: Facilities describes Mission as “a battleship heated by 300 toasters.”
Building committee: this project is atypical. There are so many different stakeholders that it just made sense for Payette and PDC to meet with every single stakeholder in each of the Science Departments during the design phase of this project. The higher-level steering committee was composed of Fred Puddester, Tiku Majumder, Amy Johns, Ken Jensen, Jason Miner (and now Mike Wood and Diana Randall), and Rita Coppola, assisted by our architect Payette.

Anticipated completion date: South Building summer 2018; North Building January 2021

Description: The South Building will house the Chemistry, Biology, and Physics Departments as well as the shops. The North Building will be the home of Mathematics and Statistics, Geology, and Psychology. In addition to faculty offices the North Building will contain 10 registrar-scheduled spaces including 5 typical classrooms, 2 computer classrooms, 2 seminar rooms and a 200-person auditorium. Each department has their own seminar room controlled by the department. The South Building will contain faculty offices and 29 labs. The North Building will house 19 faculty labs plus one shell space for a future Psychology use. Offices are being designed to accommodate the teaching of tutorials. Both buildings will have ample student space, conveniently located, such that working closely with faculty will be supported. The South Building will be an addition to the south side of the Unified Science Building, while the North Building will take the place of the Bronfman Science Building. This project also includes renovations to the Schow Library with the addition of 2 large (60 person) classrooms, renovations to Biology and Chemistry labs located in Thomson and Morley and improved space for the Computer Science Department.

Motivation: Director of the Science Center Tiku Majumder began advocating for new or improved space beginning in 2013, as science faculty noticed a growing need for more office space, and anticipating the need to accommodate more faculty offices and labs as faculty retired and new faculty with even more ambitious research programs were hired.

Total Budget: $204M

Financing: Gift: $100M, Debt: $70M, Endowment: $34M

Architect: Payette

Construction Manager: Consigli Construction Co. (South Building), Barr&Barr (North Building)

Williams Project Managers: Mike Wood (South Building), Diana Randall (North Building and lab renovations), Doug Schlaefer (lab renovations)
BOOKSTORE

**Building Committee:** Amy Johns, Lee Park, Matt Sheehy, Dave Pilachowski, EJ Johnson, Karen Shepard, Ken Jensen, Mike Wood, and Rita Coppola

**Date Completed:** August 2017

**Motivation:** Improve convenience for students, faculty, and visitors to Williamstown as well as contribute to energizing Spring Street by bringing more people to the center of Town.

**Description:** The Williams Bookstore is a 15,000sf, three-story building, designed for LEED Gold certification and currently striving for LEED Platinum. It features large two-story windows, canopies, and rhythmic openings in the façade that create a dialogue between the new building and the existing street fabric while the use of local materials celebrates the unique character of the Berkshire Mountains. Housing trade books, textbooks, a “third wave” coffee bar, and a retail section of Williams College-branded merchandise, as well as commercial office space on the third floor; the Bookstore’s interior spaces are playful and bright, juxtaposing brick walls with light wood and quartz shelving. A staircase serves as a vertical hearth, allowing visitors to move freely between books and other retail. The building will also serve as a community room for book readings. Various items suggested by the building committee/Design Review Committee added to the function and aesthetic of the building. Two examples of this are no metal windows, hence the Duratherm wood windows, and interior operable partitions to allow for flexibility of hours and usage between the coffee shop and the bookstore.

**Total Cost:** $10.3M

**Financing:** Debt: $10.5M

**Architect:** Cambridge 7 Associates

**Construction Manager:** Engelberth Construction Incorporated

**Williams Project Manager:** Mike Wood
NEW WILLIAMS INN

Building Committee: EJ Johnson, Marc Gotlieb, John Skavlem, Jim Kolesar, Joe Finnegan, Amy Johns, Linda Conway, Brian Teal, and Rita Coppola

Anticipated Completion Date: July 2019

Motivation: Relocating the inn to the base of Spring Street aligns with the town’s master plan, which calls for greater density in the town center; significantly improves the land use where the inn will be located; adds to the tax base; replaces a deficient building. Importantly it takes this center of visitor and community activity and embeds it in the heart of town where it will add year-round vibrancy to the street.

Description: The new Williams Inn will not only operate as a hotel, but as a community space. The 58,000sf, 64-room hotel, will be reflective of the architecture of New England farms, built of stone and wood. The new inn will resemble a farmhouse, while the restaurant and bar will be housed in a barn-like structure. Featured will be a full service restaurant, 3,200 square feet of meeting and event space, and a fitness center. The inn will be located within walking distance of the downtown, Clark Art Institute, and Williamstown Theater Festival. Construction commenced on the Inn project in October 2017 and is targeting a summer 2019 opening. The building committee insisted on a stone veneer at the farmhouse section of the new inn and barn board siding at the restaurant. The Design Review Committee agreed with these decisions.

Total Budget: $48.6M

Financing: Endowment: $48M

Architect: Cambridge 7 Associates

Construction Manager: Engelberth Construction Incorporated

Williams Project Manager: Mike Wood
HORN HALL

Building Committee: Jason Moran, Amy Johns, Doug Schiazza, Dave Dewey, Keli Gail, Eva Fourakis (student), Karen Huan (student), Ken Jensen, Mike Evans, Tom Smith, and Steven Nafziger.

Completion Date: May 2016

Motivation: Horn Hall is the first step in a campus-wide dorm renovation/new dorm program that seeks to address the needs of the College’s dorms that have not been upgraded in more than 20 years. Horn was the key first step because it gives us critical swing space that will allow us to temporarily shutter a dorm every year and a half to two years while it undergoes renovation.

Description: For the first time in more than four decades, Williams designed and completed the construction of a new 25,000sf residence hall. Horn Hall, located on Stetson Court, has a total of 60 beds, 40 singles and 10 doubles. There are 10 suites each housing six students. The suites share a private common room and bathroom and are in groups of two with a pod common room attached for larger gatherings. Complementing the suites is a first-floor house common room and community kitchen along with a multi-purpose classroom. Laundry is located on the main living level for student convenience. The building is broken into three sections to visually reduce the 25,500sf structure and gives it a residential look and feel. An aggressive energy use index (EUI) was planned from the beginning and LEED Gold certification is pending.

Total Cost: $15M

Financing: Gift: $15.5M

Architect: Centerline Architects

Construction Manager: Engelberth Construction Incorporated

Williams Project Manager: Jason Moran
CDE RESIDENCE HALL  
(i.e. ST. ANTHONY HALL)

Building Committee: Gerald Caprio, Thomas Powers, Rachel Louis, Rita Coppola-Wallace, Amy Johns, Ken Jensen, Theresa Sawyer

Anticipated Completion Date: October 2018 (Phase 1), October 2019 (Phase 2)

Motivation: Since the CDE’s inception all of its program components, including instructional, dining, residential, and social, have been housed in the historic St. Anthony Hall. CDE is one of two graduate programs at Williams and as such, the desire to provide for accommodations more in keeping with early-career professionals at the graduate level was a goal of this project.

Description: The construction is divided into two phases. The first phase is the construction of a new 30-bed residence hall with private bedrooms and bathrooms that are shared between two adult students. This building is designed to achieve Net Zero Energy certification and has a geothermal system for heating and cooling requirements. The second phase is the renovation of the current, historic St. Anthony Hall building. The goal of this renovation is to preserve the historic integrity of the building. With the removal of the student bedrooms, the spaces will be repurposed to house additional classroom, study, and office space. The dining function will be relocated and upgraded to comply with applicable codes and regulations. The construction of the residence hall south of the existing building creates a mini-campus for the CDE program to maintain the current community feel of the live-work model.

Total Budget: $29.3M (residence hall $15.1M/St. Anthony Hall $14.2)

Financing: Gift: $27M, Endowment: $2M

Architect: PBDW (Phase 1), Centerline Architects (Phase 2)

General Contractor: Cummings Construction (Phase 1)

Williams Project Manager: Theresa Sawyer
SAWYER LIBRARY

**Building Committee:** Dave Pilachowski, Michael Brown, Eric Beattie, Alice Brown, Sylvia Kennick Brown, Keith Finan, Wayne Hammond, William Harrold, Peter Just, Michael Lewis, Mark Lydon, Maggie McDonald, Evan Miller, Craig Olshan, Leyla Rouhi, James Shepard, and Dinny Taylor

**Completion Date:** July 2014

**Motivation:** During four years of study and hard work the committee examined the joint needs of Stetson and Sawyer, buildings linked not only by a shared history and mission, but a physical proximity. The reasons were many for the construction of Hollander and Schapiro, the modernization and expansion of Stetson, and the ultimate demolition of Sawyer, including everything from architectural incompatibility, to ADA accessibility, to constrained interior spaces (remember the rabbit warren of faculty offices?). The goal was to create faculty offices conducive to scholarship, teaching spaces that encouraged the type of student-faculty interaction that the College sees as its strongest asset, and a focal point for students to engage in research and quiet study.

**Description:** This project, known as the Stetson/Sawyer Expansion Project, created increased space for the humanities and social sciences, the Sawyer Library, the Chapin Library, the College’s Archives, the Office of Information Technology, and ancillary functions. It also radically reconfigured the northeast quadrant of the campus, created new green space and vistas, while restoring the historic Stetson Hall to a position of prominence in the College’s academic infrastructure. Important and necessary precursors to the project were the design and construction of Hollander and Schapiro Halls. An important footnote to the project was the design and construction of the new quad created by the three new buildings.

**Total Cost:** $85.9M (Sawyer)

**Financing:** Gift: $99.6M, Debt: $49.9M (includes Schapiro, Hollander, and quad)

**Architect:** Bohlin Cywinski Jackson Architects

**Construction Manager:** Consigli Construction Company

**Williams Project Manager:** Bruce Decoteau
SPRING STREET INFRASTRUCTURE

Building Committee: Not applicable

Anticipated Completion Date: winter/spring 2019

Motivation: Repeated instances of flooding, and the expectation of more, motivated this project. A very large watershed drains into a very small culvert on Latham Street. In major storm events the culvert overflows, sometimes dramatically flooding lower Spring Street and Latham Street. Over time those storms have occurred more frequently, and there is every reason to believe that they will become more frequent. The College owns about half of the land in this large watershed. A common misconception is that the Inn project necessitated the culvert project. In fact any new construction project is required to accommodate its own storm water within the boundaries of the project’s property prior to discharging. However, we chose to do the culvert and Inn projects concurrently to minimize the length of time that busy area of town would have to live with disruptive construction.

Description: A storm water master plan led to the design and construction of a 12'w x 5'h precast concrete box culvert that will replace the existing 5' diameter underground culvert thus tripling its capacity. The specific area of work will commence at the Christmas Brook headwall, heading east on Latham Street, north on Meacham Street, and across Water Street, to the Green River. This drainage project is being completed in concert with the new underground water detention system being installed beneath the public parking area at the base of Spring Street. This system will collect water from the west and tie it into the new culvert along Latham Street. When complete it will be an upgraded system designed to handle peak discharge from a 100-year 24-hour storm event.

Total Budget: $21M

Financing: Debt: $26.5M

Engineer: Fuss and O’Neil

Construction Manager: Maxymillian

Williams Project Manager: Jason Moran
HEWAT HOUSE

Building Committee: Wendy Adam, Steve Klass, Aaron Gordon, Scott Henderson, Rita Coppola

Anticipated Completion Date: July 27, 2018

Motivation: The staff of Thompson Health Center has grown due to increased demand for student wellbeing services, especially in the area of mental health. The constraints of the existing building (Thompson) resulted in the dispersion of staff members to vacant offices around campus. This was undesirable for many reasons, including being unconducive to the privacy of patients. The project will unify an important service group on campus. Being able to have a central location, directly adjacent to Thompson Health Center, will allow the department to streamline its functionality as well as be an independent entity on campus.

Description: The Hewat House project includes the conversion of a residential building to offices for the Integrative Wellbeing Services (IWS) department. The project includes 5,000sf of renovated space and a 1,500sf, 3-story addition. The program for the new IWS space will include 19 offices, waiting/well-being space, a multi-purpose room, break area, and a new elevator.

Total Budget: $2.6M

Financing: Debt: $2.5M

Architect: edm Architecture and Engineering

General Contractor: Wright Builders

Williams Project Manager: Scott Henderson