

# The Polaris Plan (Winter 2017)

By the Committee On Undergraduate Caltech Housing (COUCH)

IHC: R. Morton, G. Chen, G. Tender, A. Lin, D. Almasco, V. Chen, N. Huffman, S. Mittal, S. Liu, S. Cai

Focus group leaders: T. Liu, S. Crucilla, A. Dorsey, U. Padia, J. Jeon, T. Gorordo

<b>Abstract</b>	<b>1</b>
<b>I. Bechtel Overview</b>	<b>3</b>
<b>II. Caltech Core Values</b>	<b>3</b>
<b>III. Current Caltech Community Issues</b>	<b>4</b>
<b>IV. The Polaris Plan</b>	<b>5</b>
<b>V. Logistics</b>	<b>10</b>
<b>VI. Safety Net</b>	<b>11</b>
<b>VIII. Details to Consider</b>	<b>12</b>
<b>IX. Extended Future of Bechtel</b>	<b>13</b>
A. One Year Vision	13
B. Five Year Vision	14
C. Ten Year Vision	14
<b>X. Conclusion</b>	<b>15</b>
<b>Appendices</b>	<b>16</b>
Appendix 1: Bechtel Layout	16
Appendix 2: Caltech Core Values Expanded	17
Appendix 3: Relevant Survey Data	20
Appendix 4: Literature Citations for Vision Plans	21

# Abstract

In the spring of 2017, six focus groups were formed to research different ways of populating Bechtel. Each focus group had a unique topic: themed housing, all-freshmen housing, sophomore-priority housing, house affiliated colonies, new houses, and unaffiliated housing. These groups conducted interviews with staff and faculty, surveyed the Caltech undergraduate population, visited other schools with pertinent residential life models, and read relevant literature. Together, the groups came up with a list of core Caltech values that an ideal residential life system would encourage and framed their investigation in context of these values. They also discussed common issues with the current residential life system, the viability of each of their options in the Caltech community, and possible residential life system implementations. This document proposes one of these implementations, the Polaris Plan, a three part program for Bechtel residential life. The Polaris Plan would be a viable system to implement in the coming fall, and would provide a test bed for several different ways of populating Bechtel. The paper details how such an option would fit into the Caltech community, some of the mechanics behind its implementation, and an outlook on the future of Caltech's residential life system.

# I. Bechtel Overview

The Bechtel Residence is scheduled to be opened in the fall of 2018. It will have 212 student beds organized into four, six, eight, and twelve bedroom suites along with several singles. The building will have seven apartments for resident associates (RA) and two faculty in residence (FIR) apartments. There will be three kitchens and a dining hall, and all students will be on a Caltech-affiliated board plan. Other amenities include three laundry rooms and nine common lounges/study rooms. The current plan is for Bechtel to have six peer advocates in the first year. As of December of 2017, there are no finalized plans for who will live in Bechtel.



Figure 1: The first level of Bechtel. Other levels of Bechtel are included in Appendix 1.

The Committee On Undergraduate Caltech Housing (COUCH) was formed to represent the undergraduate side of the discussion for who should live in Bechtel. The COUCH is a student group composed of the ten members of the Interhouse Committee (IHC) and six additional student leaders. Throughout the summer and fall of 2017, the COUCH explored several different concepts for structuring the residential system in Bechtel and how these proposals would fit into the bigger picture of residential life at Caltech.

# II. Caltech Core Values

As part of the discussion on Bechtel, the COUCH developed a set of core values of residential life. These values are ideals that a successful residential life model should foster, and are presented below:

1. Intellectual growth - supporting learning and intellectual development
2. Mentorship - learning and receiving guidance from other students, both academically and non-academically

3. Diversity - exposing students to peers from different backgrounds and experiences
4. Identity - developing an independent identity and sense of self
5. Support - fostering a community that cares for students and where students care for each other
6. Honor Code - upholding the spirit of the Caltech Honor Code
7. Choice - having options for where to live in order to suit different wants and needs

The Bechtel proposals will be considered in the context of these seven core values, and each principal is elaborated in detail in Appendix 2. In order to meet these ideals, the COUCH developed the Polaris Plan, a proposal that describes how Bechtel will fit into Caltech residential life.

### III. Current Caltech Community Issues

Throughout their research, the focus groups came across several recurring issues faced by the student body with regards to residential life. Ideally, whatever system is implemented in Bechtel would help relieve those issues.

#### **Choice**

Currently, there are only a few options with regards to residential living for Caltech students. They can live either on or off campus, and they can live as either unaffiliated or affiliated with a house. The on-campus options in particular are very limited, with Marks-Braun being the only choice for students choosing life outside of a house. Next year, with the removal of the Chester, Del Mar, and off-campus alley (OCA) residences, students will be left with even fewer choices. A good residential life model is one where students have many choices in their environment, and opening up more options for students in Bechtel will fix some of these issues.

#### **Isolation**

A limitation of the current residential life system is that it can be challenging for students to form connections outside of their house. The director of Caltech's health and counseling center, Jennifer Howes, also identified this limitation to be one of the main difficulties with the residential system. Ideally, Bechtel would offer new opportunities for Caltech students to connect with their peers.

#### **Freshman Experience**

Under the current system, there can be pressure for freshmen to choose a house, regardless of whether they wanted to take part in the system. Although there is an option for freshmen to opt-out of the House system, the high social cost of opting out can make this choice unattractive. There are also concerns that the house environments are not beneficial for all freshmen. By restructuring the housing system through Bechtel, we hope to make new students feel more comfortable with where they live and ensure an adequate number of options.

## IV. The Polaris Plan

The Polaris Plan seeks to enrich residential life at Caltech and uphold our core values by blending multiple housing models into one single residential community. The plan accounts for all Caltech-owned undergraduate housing (starting fall 2018) and assigns rooms in three stages: themed suites, suites chosen as a block, and individual rooms chosen in Bechtel, Marks, and Braun.

### Themed Housing

#### **Themed Housing Overview**

We view themed housing as a two pronged system. Traditionally, themed housing is a type of living-learning community where students are given the opportunity to pursue interests in their residential life, such as art, music, language, and more. We have expanded this definition to include an additional prong: needs-based housing, such as quiet housing and substance free housing. Needs-based housing will not have a cap in order to ensure all students can feel comfortable in their housing environments.

To ensure the quality of themes and provide a good testbed for the option, we believe only a fraction of Bechtel should be themed housing. Based on interest gathered from survey data, 10-20% of Bechtel could be a good starting point for themed housing (Bechtel Occupancy Survey II, 2017). Depending on future demand, this percentage should be allowed to grow or shrink naturally. According to survey results, the most popular themed housing options are make your own theme (50% of respondents were interested), quiet housing, and food co-op. Graphs are included both below in this section, as well as in Appendix 3.

Food co-op themed housing would consist of students working together to plan out and cook meals. At Caltech, students in a food co-op would be “on board” and live in Bechtel, but be provided with ingredients to cook their own meals in Avery kitchen (which is in the process of being converted into a teaching kitchen). This idea has been discussed with Jon Webster, Director of Dining Services, as a viable extension of the board plan. In surveys sent out, there has been widespread interest for this type of housing and indications that it would be a popular option.

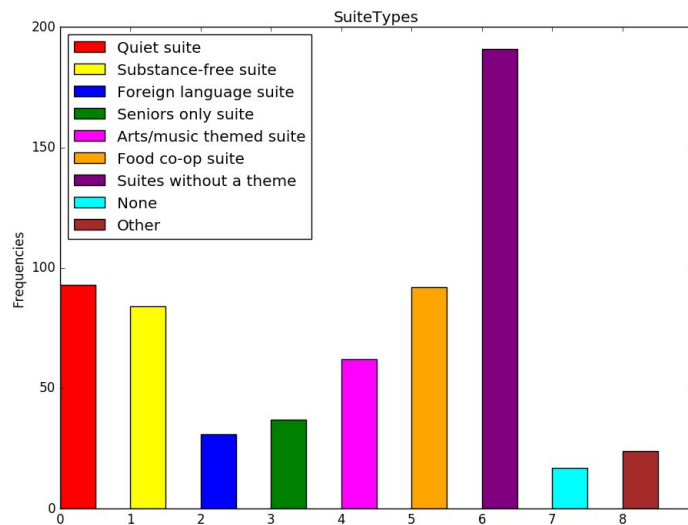


Figure 2: This graph was generated from the data of a survey with 278 respondents. For this question, respondents were asked to mark the options that they would be interested in.

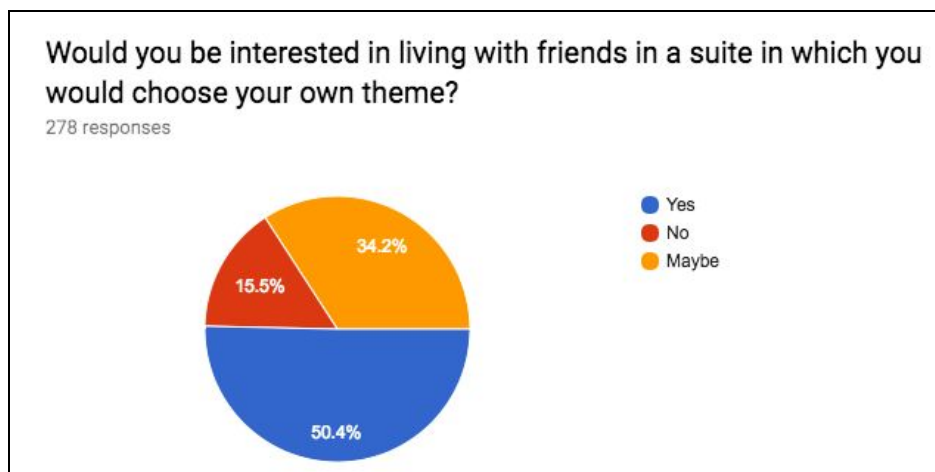


Figure 3: This graph was also generated from the data of a survey with 278 respondents. For this question, respondents were asked to mark one of the options regarding their interest in make-your-own themed housing.

We envision that students would apply for make-your-own themed housing or needs-based housing at the beginning of second term, but this timeline would be adjusted for the first year. Students in make your own themed housing would apply, with a group of other students, in the form of a detailed plan explaining their theme, how they will uphold it, and the name of a faculty mentor. Such an application would be similar to the current club creation process. In studies, themed housing has been shown to have a significant benefit to students, but “lack of faculty and residential staff planning and accountability can significantly reduce the benefits” of themed housing (Frazier & Eighmy). Creating a formal process for the themed housing process will ensure students in this type of housing get the maximum benefits. We

also envision a forum where students could post about their theme ideas and have others from different residences express their interest and potentially join. This could be run on Donut, the ASCIT website. Housing would evaluate theme ideas as well as the needs-based applications before the normal suite filing process in order to determine the number of and which suites will be open.

For needs-based housing, there would be a brief application where students explain their needs. The Housing Office will also be able to evaluate these requests. If a needs-based suite does not fill, the theme would be canceled and students with demonstrated needs would be given alternative housing, potentially a single in Bechtel or Marks-Braun.

The food co-op would work in a similar manner to needs-based housing. However, the theme would be capped to one suite (most likely the 12 person suite due to perceived interest). Students would individually apply to the housing office to live in this theme. The housing office will either accept or reject their applications. We assume that due to the suite structure and perceived interest, there is a good chance that the theme will overfill, indicating that there will need to be a screening process.

Make-your-own themed housing would be open to sophomores, juniors, and seniors. Survey results show that the first two groups would be more interested, though there is still interest in the latter group. Including freshman within make-your-own themed housing seems difficult considering the current room picks process. Also, allowing freshmen to pick into small groups might limit their social interactions and integration. Needs-based housing may be a more viable option for freshman with need.

### **Themed Housing Benefits**

Themed housing can have many benefits to the Caltech community. In our evaluations, we have noticed in the current system, there are only a few choices for current students regarding their residence: whether to live on or off campus and whether to be affiliated with a house. Themed housing would allow for a new type of housing, creating more options and flexibility for students, which can lead to more diversity and independence within the student body. It would also allow for students to be in housing that caters to their needs, which creates a supportive community of others who are in similar situations. Make-your-own themed housing creates a space where students can seriously focus on passions without feeling pressure to live in a certain house. The food co-op system can also potentially address limitations of the current board plan.

### **Themed Housing Challenges**

There are a few challenges we see. For students in make-your-own themed housing, there is a chance that they may be isolated from the community. However, we think that having presentations and demonstrations put on by each theme open to the entire campus community would allow for cross-community interactions. Also, there is a worry that students will game the system to secure a spot early in Bechtel without following through on the theme. However, a careful screening process by the Housing Office along with the requirement for a faculty mentor would hopefully prevent this problem.

# Suites

## **Suite-Style Living Overview**

In the second stage of the Bechtel filling process, student groups will submit applications for a particularly sized suite. The order of suite selection could be determined through random lottery. Bechtel has (16) eight-membered suites, (2) twelve-membered suites, (4) six-membered suites, (5) four-membered suites, and (16) detached singles. We propose that about 70-80% of the suites be filled in this manner. This process is most similar to the general off-campus lottery and helps to support the loss of all Caltech-owned off-campus housing.

## **Suite-Style Living Benefits**

Suite-style living provides a number of benefits that are desired by Caltech's sophomores, juniors, and seniors. Suite style living offers students a higher degree of privacy and control over their interactions. This privacy can be useful if students want to be away from noise or other disturbances, a concern for some students living in unaffiliated housing. Suites have been shown to provide more independent living for upperclassmen: "apartment style residences, with individual private spaces, allow upperclassmen to feel independent while still living on campus to help mentor freshmen and sophomores" (Rutledge, 2012). Additionally, we expect that the members of the suite may form close friendships, which can provide a tight-knit support network for physical and emotional health encompassing a range of college majors, interests and houses.

## **Suite-style Living Challenges**

This style of living also presents important challenges that must be overcome. Several studies have shown that one of the primary challenges of suite-style living has been to find "means to avoid social isolation due to the physical segregation of suite-style halls" (McCluskey-Titus). This concern is confirmed by students who feel "awkward walking into someone else's suite" (Brandon et al.). Bechtel should have building-wide events to prevent students from only interacting with their suitemates. The architectural design also poses a challenge for counseling because it takes "more time and effort to discover students who may need help in suite-style or apartment style residence halls where there is a higher degree of privacy" (Fulcher et al.). Suite-style living will limit interactions between students, but could be particularly damaging to freshmen residents. As research shows, "... if housing professionals want to place first year students in an environment where the possibility for interaction is the highest, then regulations that limit housing options for first year students to traditional residence hall environments might be advisable" (Brandon et al.). Since freshman year is an important transitional period in which students must quickly acclimate to difficult coursework, receive mentorship, and build a strong social and support networks, these challenges will have a particularly damaging effect on freshmen.

# Singles

## **Singles Overview**

The Bechtel rooms available to pick into as singles would be the rooms that are not chosen during the themed housing and group suite phases. Specifically, these rooms are one of the 16 detached singles or rooms within the suites that are empty following the first two stages. After the themed housing and group



suites are filled, the Bechtel singles would be filled at the same stage as Marks-Braun as an extension of the off-campus lottery.

A Bechtel single would be a valuable option for the student who wishes to live on campus outside of the houses, wants a single, but does not want to form a suite group during the second stage. Though Caltech currently offers singles in Marks-Braun, a Bechtel single would provide a greater sense of community for those who may feel isolated from the safety net, e.g.. students with smaller friend groups, students who have been on leave of absence, or students who want to meet new people as part of their residential experience. Being part of Bechtel would allow them to create diverse connections with people they might not meet in their classes and house, especially if they choose to pick into a room within a suite.

### **Singles Benefits**

As mentioned in previous sections, there are a multitude of benefits associated with suite living. By offering singles within suites in Bechtel, we hope to provide choices and benefits to students who may not initially move into Bechtel with a group of friends, but would like to try suite living and are interested in meeting new people. Additionally, this provides more opportunity for students who would like to live on campus in a single room.

### **Singles Challenges**

The main challenges with singles echo the challenges covered in the suite-style living section. The separated style of the suites can lead to self-isolating behaviors, which may be even more marked among those picking into a single (especially if they pick into a single within a suite of unfamiliar peers).

## **Special Case Housing**

In order to accommodate students who require a specific living arrangement, a subset of rooms and suites in Bechtel and/or Marks-Braun will be reserved for them. The individual singles in Bechtel (those outside of suites) are good candidates for rooms that should be reserved. These students include those who require disability accommodations or other circumstances deemed fit by the deans.

## **Optional Freshmen Residence**

A subset of rooms in either Bechtel and/or Marks-Braun would also be reserved for freshmen who have decided to seek out a different experience separate from Rotation and the House system. In order to enrich the experience of those freshmen during their first year at Caltech, they would live in close proximity to each other as well as to an RA apartment. Specially-trained PAs could reside with the freshman students in the program, and help with any events or programming that take place. It should be noted that Marks-Braun is preferred for this option because it will have a PA and RA system to give the freshmen a stronger support network.

Students would be able to request placement in the optional freshman residence before, during, or after Rotation. It is suggested that information about the optional freshman residence be made available through the Deans' office or the IHC leading up to Rotation and at the end of Rotation before students submit their House rankings. It is important to note that it will be difficult to accurately determine the number of freshmen who will choose the optional freshman experience. The number of freshmen who have chosen to reside outside the House system has been around a handful each year. The benefit of the Polaris Plan's flexibility is that this program could be implemented in various locations depending on the number of beds required.

## V. Logistics

Pragmatically, a residency model for Bechtel should take the form of a well defined procedure and set of policies for filling and maintaining the residence. To this end, the COUCH proposes the following logistical timeline for filling Bechtel each year:

1. Application for Themed Housing released (February)
  - 1.1. Application and selection process must take place before House-by-House room-pick proceedings occur. This is to ensure unsuccessful theme bids do not negatively impact the other residence options available to students making said bid.
  - 1.2. The applications are assessed by the Housing Office, in consultation with students and other groups.
2. Themed Housing Suites are formed (March)
  - 2.1. Initial target population in non-needs-based themes should be ~10-15% of the total Bechtel population at maximum (~20-30 students). This is to ensure the quality of the themes and provide a good testbed for the option in early years. Depending on future demand, this percentage should be allowed to grow or shrink naturally.
  - 2.2. A successful bid must be binding. i.e a student cannot back out of a theme-group under normal circumstances, otherwise a theme may significantly underfill if students are later able to get more personally desirable picks elsewhere.
  - 2.3. We recommend that any quiet/substance free themes which arise or are created be placed on the 3rd floor. We anticipate that this will minimize conflict with other suites which are not compatible with these themes, and aligns with the selection of special-case singles, which we anticipate will also potentially desire quiet/substance free living.
3. House Room-Picks Proceed as usual. (April)
  - 3.1. "Off-Campus"-like lottery numbers are assigned just prior to this, as they are currently.
4. Suite Housing Picks take place (Early May)
  - 4.1. Groups of students place "bids" for a suite of a given size with a pick number which is randomly assigned among the bids.
  - 4.2. Bids accepted in order of pick number proceeding in suite size from small to large (e.g the 4-member suites are filled first, 6-member next, etc...). A successful bid must be binding, but students may participate in multiple bids and "fall-back" on larger suite bids if their smaller suite picks are not successful.

- 4.3. 12-member and 8-member suites should be allowed to underfill (i.e submit a bid with a smaller number of members than the suite has beds), but 6-member and 4-member should not unless there are not enough small-suite applications to fill the smaller suites with complete groups.
5. Single Housing Picks take place (Mid May)
  - 5.1. After suite housing picks are completed, students may pick into singles not reserved for special cases. Picks are determined by off-campus lottery number.

## VI. Safety Net

In considering the overarching mental health and safety net of the future Bechtel Residence, there are a few things we believe important to preserve from the current system. Currently, some of the benefits of the safety net system include the beneficial and reliable coverage of students by the RAs, Upperclassman Counselors (UCCs), and many other resources, as well as the strong development of unofficial peer support networks. Each house has a Counseling Center liaison, RAs, and their own set of UCCs. Current off-campus housing, such as the Chesters and Marks-Braun, also have RAs and UCCs. Starting in 2018, the UCC system will be replaced with the Peer Advocate (PA) system, which seeks to provide similar coverage and support from trained peer resources. At the moment, the plan is for each house to have roughly four PAs trained per year, with some number of PAs designated for Bechtel and Marks-Braun. We would like to utilize many of these resources for the future Bechtel Residence in order to create and build up a strong support network.

As part of our research, we considered how the safety net would function in each residential model. It is important for the Bechtel PAs to be conscious of the unique needs that the residence will have. Certain concerns arise with incorporating PAs in all-freshman housing. For example, all-freshman housing would preferably have PAs as a larger presence than those in the houses. PAs who have specialized training would be beneficial in building an overall program to help freshman adjust to life at Caltech. Since the PA program is just starting, it won't be feasible to implement a strong specialized PA presence before 2018. One benefit of the Polaris Plan is the flexibility with which the safety net can be incorporated within the Residence, which can help us solve many of these issues.

The Bechtel Residence's format will create unique challenges for mental health support. Notably, the large size will pose a challenge in how to best support students who might be less assertive about seeking help; it is imperative that a solid and accessible support network be established so that struggling students do not fall through the cracks. Another concern is the suite-style living. The additional door of the suite provides a literal and metaphorical barrier between the residents and any resources living outside the suite, which might limit familiarity with resources. Furthermore, a PA or Health Advocate living in a suite would be difficult for other students to access.

We propose a number of actions to help promote an accessible support network. First, social events at both the residence-wide scale and smaller (a floor or even a few suites) coordinated by RAs, PAs, and/or FIRs can help students become familiar with these resources. One potential solution to the issue of PAs

being inaccessible to others outside their suite is to ensure that some of them live in the detached singles in Bechtel. Additionally, we recommend that the Bechtel Residence has a counselling center liaison(s) like the houses do, and that this individual works closely with the RAs and PAs in the building to create helpful programs and strategies for supporting Bechtel.

## VIII. Details to Consider

In addition to the safety net and student leadership in Bechtel, there are other mechanics that will have to be worked out if it is implemented.

### **Board**

Based on surveys sent to the student body, many students are adverse to living in Bechtel if they are required to enroll in the current board plan (survey data in Appendix 3). Given how much space is in Bechtel, it is unclear if it will be able to fill, especially if all students must be on board.

### **Programming**

Campus resources such as the counseling center, diversity center, and Title IX office currently offer some of their programming through regular presentations and visits at each of the eight houses. It is important that these programs will also be available to students in Bechtel, home to students both affiliated and unaffiliated with a house.

### **Stewardship and Student Government**

Prior to Bechtel's opening, a committee of students, in consultation with administrators, should decide what Bechtel's student government will look like. Bechtel should have a Stewardship Committee with representation on the campus wide StewComm to manage the building and ensure it is well kept. Additional representatives that we suggest could be a part of Bechtel include Health Advocates, Board of Control (BOC) Representatives, Conduct Review Committee (CRC) Representatives, Food Committee Representatives, Academics and Research Committee (ARC) Representatives and IMSS Representatives. We believe that all of these positions will be invaluable to the Bechtel community and help to improve the general quality of life. The exact shape of Bechtel's student government should be decided by a follow-up committee of students and staff..

## IX. Extended Future of Bechtel

In an ideal experiment, we would be able to test out every possible residential life option Caltech over the course of several years, and see which one produces the happiest and healthiest community. This is unrealistic in implementation, largely because of the small and variable size of the Caltech community. We believe that the Polaris Plan is a good option for the upcoming year because it enables us to test three styles of picking into rooms, is flexible in its exact proportions and structure and is relatively easy to transition to. Additionally, the Polaris Plan introduces more choice for students in their on campus housing options. This plan would also allow, in multiple ways, for students to make new connections to peers that they might not necessarily encounter in the current housing system.

Regardless of how Bechtel is structured in 2018, the residence should be reevaluated and its performance assessed in the coming years. Before implementation in 2018, a committee of administrators, staff, and students should decide on a several indicators of success that they hope to see in several years. If appropriate, a “baseline” measurement of these indicators should be taken before Bechtel opens and compared to future results.

This student, staff, and administrator committee should also re-evaluate residential life models that were infeasible due to time constraints. In regards to all-freshman housing, this committee could analyze if it should be implemented over a longer time scale and/or if freshman-specific programming should be incorporated into the current residential life model.

### A. One Year Vision

The first year of the Polaris Plan will be useful in seeing the interest and success of several different options. With regards to themed housing, there will be a better idea of the interest in themed housing after the theme application process completes. Within a year of implementation, themed housing can be evaluated to see which themes were successful in engaging their students and what kind of framework and mentorship was best for their development. New challenges and benefits will also be made clear for non-themed suite style living and singles. Concerns about the possible isolation with living in suites and singles is something that should be examined. The interest and success of needs-based housing will also be evaluated. The first year will give some picture of the interest in the optional freshman experience. The first year will also give us an idea of the viability of filling Bechtel, especially given the current board plan. If it does not fill, it may be necessary to revisit talks on adjusting the student board plan.

## B. Five Year Vision

Within five years of the Polaris Plan being implemented, the three part system will have become more established. With regards to themed housing, within five years it should be easier to evaluate which themes thrive in Bechtel. Some of the themes may last for more than a year and develop their own traditions and events. Within five years, a better understanding of the interest and success of needs-based housing in Bechtel, as well as suite style and singles living, will also develop. At this point, a much better idea will also have been gained of the interest in and the success of the optional freshman experience. As the freshman experience program matures, we will be able to see if interest in it grows, and how the experience of freshman inside the program compares to those of their peers.

This five year timeline most importantly gives time for safety net frameworks to grow and settle into place. During the first five years of Bechtel's introduction to the Caltech community, the PA program will be much better established, and more than the currently proposed six PAs will hopefully be assigned to Bechtel. Within that time the RA, RLC, and faculty residents will have been more firmly established in Bechtel. Additionally, the frameworks for programming (by the counseling center, diversity center, and others) within Bechtel will have been established.

In this time, if the safety net framework and programs seem viable, the foundation for other options (such as an all-freshman house) can be explored.

## C. Ten Year Vision

Within ten years of the Polaris Plan being implemented, it should be evident whether or not the mixed system of themed housing, suite-style living, and singles is successful, and the mechanics of the system will have been worked out. The success of the freshman experience will also measure whether or not it is viable to have an all freshman house.

Programs with both freshman seminars and on-campus residences have been shown to have a positive effect on students and correspond to decreased dropout rates (Fidler and Moore). During our discussions with Dr. Jennifer Howes, director of the Caltech Counseling Center, an all freshman house would demand a more cohesive first year experience and would make it easier to craft programming for the freshman class. These citations can be found in the attached All-Freshman Housing Focus group report, as well as briefly in Appendix 4. An all-freshman house could be beneficial to Caltech students, if it came along with structured programming and changes in the safety net to accommodate a house of all freshmen. In the past few years, different small scale programs for freshmen have been attempted (freshman dinners and events), but they have not been sustained. Within ten years of the Bechtel Residence being introduced to the Caltech community, if sufficient groundwork for the programs needed to sustain an all-freshman house was made, and the optional freshman experience was successful enough, a transition to an all-freshman house could be possible.

## X. Conclusion

We conclude that a system similar to the Polaris plan would address current challenges in the Caltech community, while also being a reasonable option given the fast-approaching transition. We have outlined the details of its implementation, the challenges and benefits it would bring, as well as some of the details to consider. We have also offered a one-, five-, and ten-year vision of how the Polaris Plan could grow. We believe that the Polaris Plan is a good option for the upcoming year and that its implementation could herald an exciting period of new choices for the Caltech student body.

## References

Rutledge, K. (2012). "*The Influence of Residence Hall Design on College Students' Grade Point Averages, On-Campus Involvement, and Sense of Community*". Paper 60.

Brandon, A., Hirt, J., Cameron, T. (2008) "*Where You Live Influences Who You Know: Differences in Student Interaction Based on Residence Hall Design*". *Journal of College and University Student Housing*, 35, 62-79.

Frazier, W., Eighmy, M. (2012). "*Themed Residential Learning Communities: The Importance of Purposeful Faculty and Staff Involvement and Student Engagement*." *Journal of College and University Student Housing*, 38, 10-31.

Fulcher, K., Janosik, S. (2008). "*The Relationship of Disordered Eating Behaviors of Undergraduate Women, Their Living Environment, and Their Academic Standing*". *Journal of College and University Student Housing*, 35, 35-46.



# Appendices

## Appendix 1: Bechtel Layout

### Level 1

- Student Suites
- FIR
- Common Areas
- Mechanical
- Singles
- Dining
- Circulation
- Building Support
- RA/RLC
- Servery / Back of House



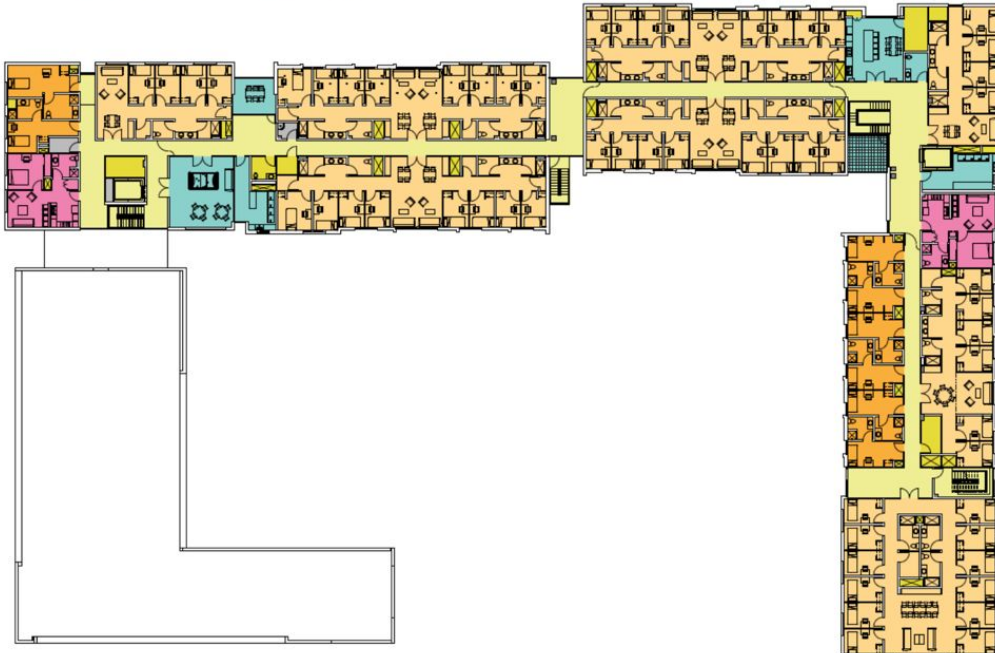
## Level 2

- |                |                         |              |                  |
|----------------|-------------------------|--------------|------------------|
| Student Suites | FIR                     | Common Areas | Mechanical       |
| Singles        | Dining                  | Circulation  | Building Support |
| RA/RLC         | Servery / Back of House |              |                  |



## Level 3

- |                |                         |              |                  |
|----------------|-------------------------|--------------|------------------|
| Student Suites | FIR                     | Common Areas | Mechanical       |
| Singles        | Dining                  | Circulation  | Building Support |
| RA/RLC         | Servery / Back of House |              |                  |



## Appendix 2: Caltech Core Values Expanded

The following is taken from a Tech Article published in the Fall of 2017, detailing the core values. Since then, we have also added an explanation for the value Intellectual Growth.

### **Intellectual Growth**

Caltech is a learning community first, and this includes learning from both inside and outside of the classroom. An ideal residential life system is one that supports diversity of thought, provides a safe space for conversation, and includes resources for furthering academic and personal excellence. Intellectual growth can be tied into almost every one of the other core values (especially mentorship and diversity), but is important enough to constitute its own value.

### **Mentorship**

Caltech places unique value on the direct and individual mentorship of students. This characteristic is so prominent that it is embodied in the Caltech seal: the image of “passing the torch” to the next generation. While this symbolizes the formal education provided by faculty, it also represents the informal social and academic mentorship provided by peers and upperclassmen.

Among the other forms of mentorship available, mentorship by upperclassmen is varied and individual. This mentorship is not only useful when working on particularly difficult problem sets, but also can help students choose a major, navigate scheduling, and adapt to the new challenges of being a college student. Respect for the Honor Code and lifelong friendships can also come out of mentorship. Many upperclassmen have gone through the same classes and difficulties that underclassmen encounter, which establishes an organic support network that is immediately available to new students. The experiences of multiple generations of Caltech students should continue to be incorporated into the student experience to promote academic excellence and social development.

### **Support**

A supportive community is one where all members--students, RAs, and anyone else in the community--encourage and help one another. It is a living situation where students feel like other people care about them, and where students are more likely to care for others. It is also a safe space where students can achieve success, and also find support to grow from their failures.

Community support can develop organically or through structured programs. RAs, peer advocates, and the services offered by the Counseling Center are all examples of formal programs. These systems can provide critical help from trained professionals dedicated to their jobs. A supportive network can also develop naturally: not everyone has, or needs to have, a title or a position. A close-knit residential system encourages individuals to look after each other, not out of obligation but from genuine empathy. A strong community should combine both types of support, both by being conducive to programming and by encouraging and enabling students to care for their peers.

### **Choice**

Students should be able to choose a living environment that suits their needs, whether it be a quiet hallway, separation between academics and social life, or close friends next door. Since students have their own unique preferences and lifestyles, it is important to offer a variety of living options to choose from. A comfortable space provides the foundation for a productive, enjoyable time at Caltech.

With great choice comes great responsibility. A sense of independence is grown out of the trust extended by administration to the students, with the underlying expectation that students will be able to handle the responsibilities that accompany their decisions. Through shared governance, students can cultivate a student-driven system of decision-making and grow with the guidance of peers and support networks in the community.

### **Diversity**

Student life and culture at Caltech should support a broad range of interests, hobbies, passions, and subcultures. Students diversify themselves into houses and across them, providing a rich and varied culture to all of campus. This variety in interests enables students to simultaneously find niches and challenge themselves, and it is core to the Caltech experience. Beyond the variety of academics available here, the wealth of interests in the student body is evident in day-to-day life through the events, projects, traditions, clubs, and conversations that form the non-academic portion of student life (that isn't sleep).

The residential life system at Caltech should stay focused on enabling students to pursue their interests and seek out new and/or like-minded communities that cultivate their ideas and stem from their ambitions.

### **Identity**

When students come to Caltech, they arrive with a unique set of perspectives, including their academic interests, gender identity, hobbies, and beliefs. From these experiences, each student's personal identity takes root.

Where we live can contribute greatly to the development of identity, so it is essential that the residential life system promotes the respect and freedom people need to express themselves and grow as an individual. Access to programming that introduces students to new topics of interest is one way to ensure students can develop their identity, but collective identity grows through the everyday interactions between friends, peers, RAs, professors, and staff. The Bechtel residential model should foster the connections and support students need.

### **Honor Code**

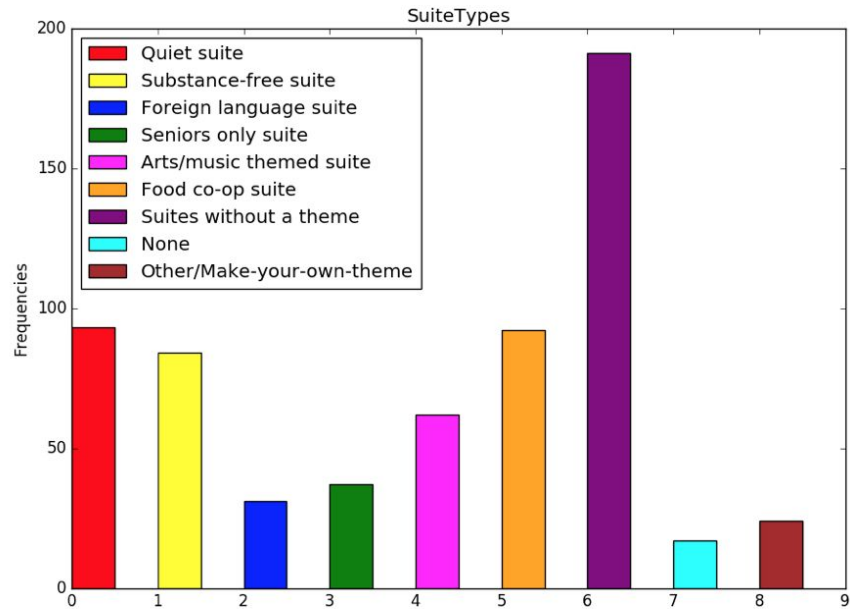
Through the Honor Code, the Caltech community strives to produce scientists and engineers with an education that goes beyond pure scholarship; Caltech students are given the opportunity to learn and grow in an environment that emphasizes integrity, honesty, and cooperation, three qualities that are integral to the larger scientific community. With students from a variety of backgrounds, each at a different place in

their personal development, the community's dedication to upholding the Honor Code ensures that all Caltech scholars are given the chance to embrace these principles in their own life.

By exhibiting a commitment to integrity and fairness, the students, faculty, and staff of the Institute set an example for each new generation of Techers, passing these values onto others year after year. The Caltech undergraduate residential experience provides a crucial opportunity for students to learn from one another, ensuring that these values remain a central part of our community culture.

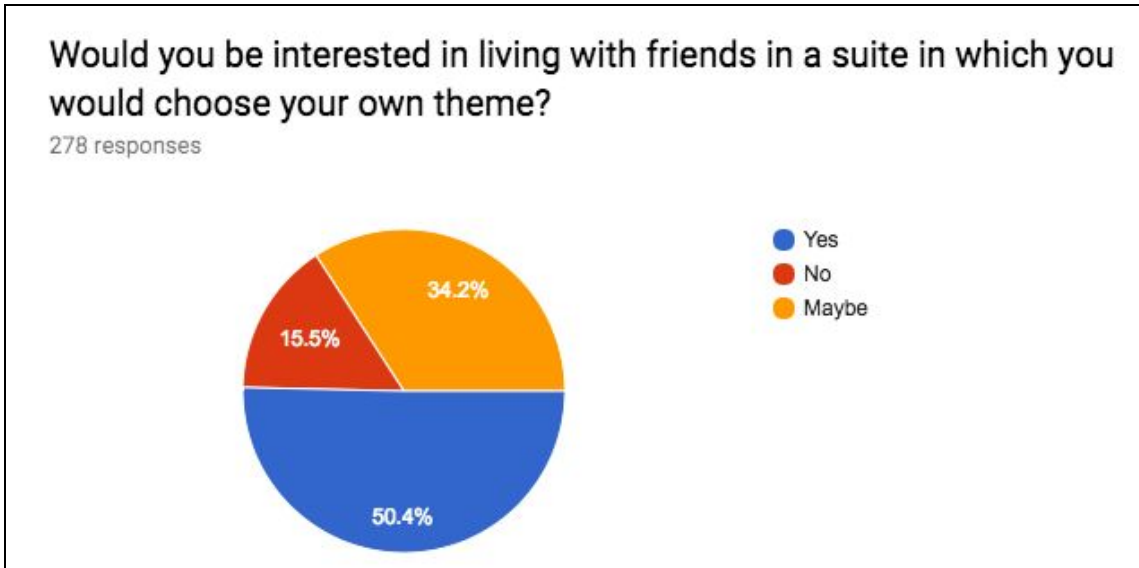
## Appendix 3: Relevant Survey Data

### Interest in Themed housing



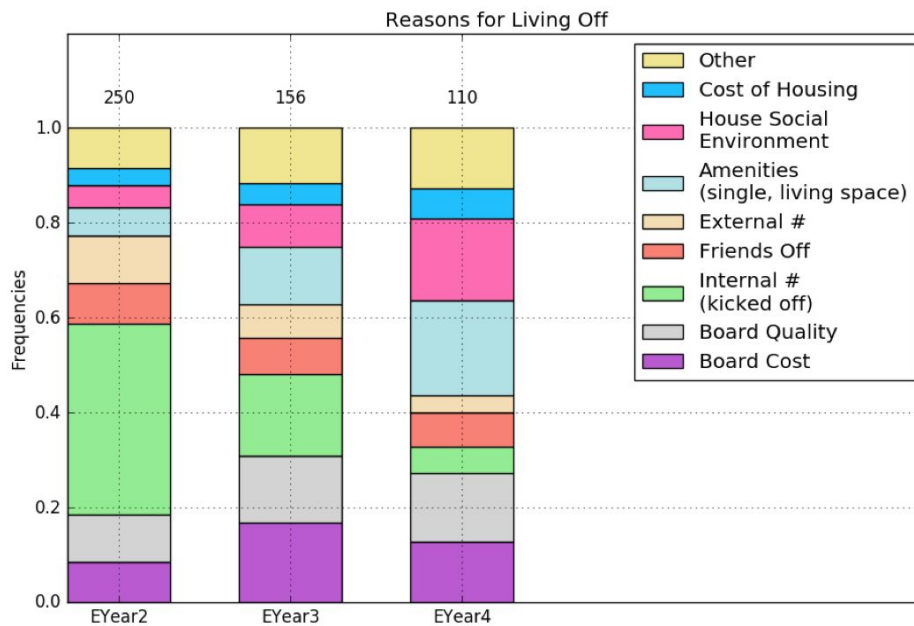
The above graph was taken from a survey with 278 respondents, who were asked to check off the options they were interested in.

### Interest in Make-Your-Own Themed Housing



The above graph was taken from a survey with 278 respondents, who were asked to choose one of the options regarding their interest in make-your-own themed housing.

### Reasons for Living Off Campus



The above graph shows the motivations for students living off campus, grouped by year. It is evident that Board related reasons are a heavy factor.

## Appendix 4: Literature Citations for Vision Plans

From the All-Freshman Housing Focus Group Final Report (further citations relevant to their work are included in their attached report):

### **A Comparison of Effects of Campus Residence and Freshman Seminar Attendance on Freshman**

In 1996, Paul Fidler and Phillip Moore examined the effects of freshman seminars and living on-campus on freshmen dropout rates. Using drop rates from the University of South Carolina from 1986 to 1993, they found that both freshman seminars and living on-campus had a positive effect on students. Freshmen that lived on campus and attended the seminars had the lowest dropout rate of 14.4%. The study found that 7.3% of dropouts could be attributed to not living on-campus, while 4.1% could be attributed to failing to attend the freshman seminars. Fidler and Moore concluded that both freshman seminars and living on-campus individually benefit freshmen and decrease dropout rates.