Bechtel Residence: New Undergraduate Houses

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New Houses Subcommittee

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1 Introduction

With the construction of new housing to increase the amount of on campus spots for undergraduates while increasing the amount of Caltech housing for graduate students, we have to decide how to structure new residences to best accommodate the student population. This plan aims to present the data collected last year regarding student concerns, as well as explore the potential benefits and issues of forming new Houses.

1.1 The Bechtel Residence

Bechtel House is a student residence that is under construction which will be completed by the fall of 2018.[1] It will be located on the north end of campus, directly west of Avery and north of Moore Laboratory. When completed it will have 212 beds across 3 floors. Unlike previous Houses, the majority of the rooms in Bechtel will be organized suite style. This means that groups of 4-12 students will live together in one unit which consists of a number of single rooms and a shared bathroom, shower, and lounge area. Additionally, there will be 16 detached single rooms which are not part of a suite and have their own individual bathrooms. The Residence also features seven RA and RLC apartments and two faculty-in-residence apartments.

By 2018, the Bechtel Residence will be home to its first cohort of undergraduate students, graduate student RAs, and Faculty in Residence. However, it is unclear specifically who will make up the undergrad portion of the Bechtel community. A number of proposals have been brought to the table including all-freshman housing, "off campus" alleys or House-affiliated colonies, or themed halls. This document will discuss the option of creating a new undergraduate House or Houses in Bechtel.

1.2 Brief history of Houses and their creation

The modern House System consists of eight undergraduate Houses, which are commonly grouped into three categories based on their order of creation. The South Houses were formed in 1931 upon the abolishment of the Institute's Greek life (fraternity) system. The dissolved fraternities were converted into the original four Houses. The North Houses were added in 1960 to accommodate the needs of a growing student body, which could no longer fit in the original Houses. The original occupants of the new North Houses came from the current student body, 96 students coming from the off-campus students, while 63 came from the south Houses. Most of the students that came from the south Houses were doing so for political reasons. Page was populated mostly by members of Ricketts House, Ruddock mostly by members of Dabney House, and Lloyd being populated mostly by off-campus students. Additionally, rotation was initially suspended during this time for three years, and the freshman were assigned their House by the current MOSH[2]. The final expansion, Avery House, was initially created as unaffiliated housing for both undergraduates and graduates, but later became a House and rotated freshmen in 2005.

1.3 Observations from Other Residential Systems

The residential systems at several peer institutions were examined previously during the Student Experience Trip in 2008. In addition, an overview of several other schools' systems was generated for this report.These

[1] For the layout/floorplans of Bechtel, see the Appendix at the end of this report.
[2] A History of UG Self-Governance at Caltech, 16-18

institutions were selected for a variety of reasons – some have similarly-sized undergraduate populations compared to Caltech, many have systems that allocate students to residences at the start of their first year, and most are centralized living communities with an established cultural and social framework. Schools were chosen to allow for comparison with systems similar to Caltech's as well as further exploration into alternative models. Of particular interest were the systems at MIT, Harvard, Oxford, and Cambridge.

MIT's housing system offers many easy comparisons to the one at Caltech. At the beginning of the year, each frosh is sorted into halls on a lottery based off their own hall preferences. Before matriculating, each frosh submits their rankings and is placed into a hall. After entering they have the option of changing their hall or moving to Greek life. After the first year a majority of students at MIT who choose to live on campus will end up in a Greek system.

The main takeaway of MIT's housing system is the ability to have communities and cultures within the confines of one singular building. The halls are often confined within a singular floor, and often the halls within a single building associate together. The halls still maintain their cultures throughout the year despite not having a singular building. This means that a Bechtel House that is partitioned into separate Houses may still preserve some semblance of a House culture.

We also looked into a number of other schools, Swarthmore, Yale, and Harvard all have housing systems but they differ greatly from Caltech's in that they all involve some sort of random arrangement. As a result none of the Houses/communities have a strong sense of culture. This doesn't offer a good comparison since people are rotated.

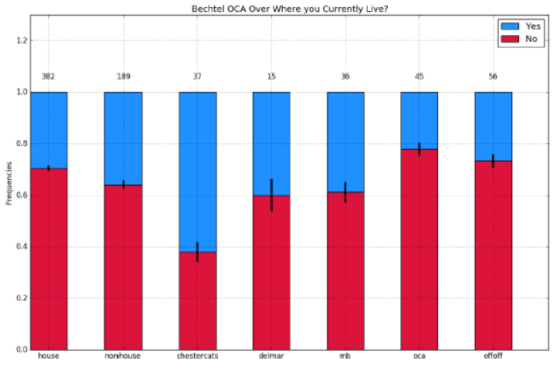
Oxford and Cambridge also offer some interesting comparisons. Their communities have identities but are much more based off traditions. They also differ in that there are many more Houses (roughly 30) and are much larger (60-300). But we cannot truly compare with these two institutions since the nature of the Houses are much more based off of tradition of history.

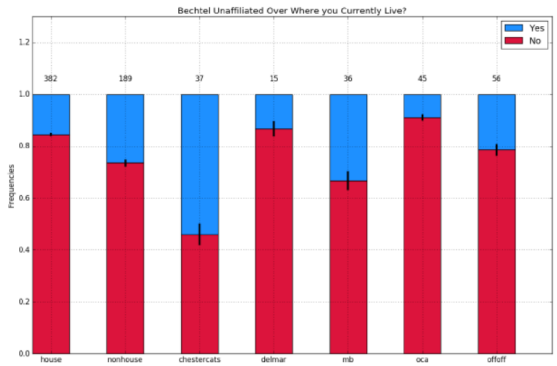
2 Addressing the needs of off-campus students

As the primary social and residential system of Caltech currently centers on the House system, creating a desirable residential experience for students who do not live in the Houses remains a challenge. Off-campus students can have varying degrees of luck accessing campus services, campus social events, the safety net, and student government such as ASCIT, the BoC, and the CRC. The availability of such resources, various social factors (especially those related to the House system), and the cost of off campus living and dining in turn influence the decision of students to live outside their Houses or outside Caltech owned Housing altogether. The Bechtel Residence will provide a critical opportunity to "[allow] all undergrads to live on campus and fully participate in residential life here," regardless of their House affiliation status[3]. As the construction of Bechtel would shift a large number of students onto campus, any system of residence for Bechtel would require consideration of the needs of the segment of population of students residing in present day off-campus housing and on-campus unaffiliated[4] Housing.

2.1 Bechtel Occupancy Survey

In Spring of 2017, a survey of the undergraduate population was conducted to investigate the reasoning that influences student choice in housing, determine the demand for various forms of housing, and inform the decision making process on Bechtel occupancy. The survey showed that the majority of students preferred living where they currently are as opposed to a Bechtel OCA, although a sizable portion would prefer to live in an unaffiliated room or an OCA in Bechtel over their current housing. Notably, 15.4% of students living in one of the eight UG Houses said they would prefer living in an unaffiliated room in Bechtel, and 29.6% would prefer to live in an OCA in Bechtel.





Bechtel OCA Over Where you Currently Live?							
	house	nonhouse	chestercats	delmar	mb	oca	offoff
Yes	0.296	0.360	0.622	0.400	0.389	0.222	0.268
No	0.704	0.640	0.378	0.600	0.611	0.778	0.732

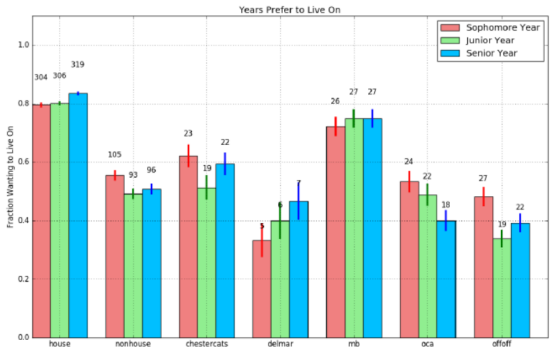
Bechtel Unaffiliated Over Where you Currently Live?							
	house	nonhouse	chestercats	delmar	mb	oca	offoff
Yes	0.154	0.265	0.541	0.133	0.333	0.089	0.214
No	0.846	0.735	0.459	0.867	0.667	0.911	0.786

When asked about whether they preferred living on campus vs. off campus, most students preferred to live on campus. It is notable that more than half of students in the Chester apartments would prefer to

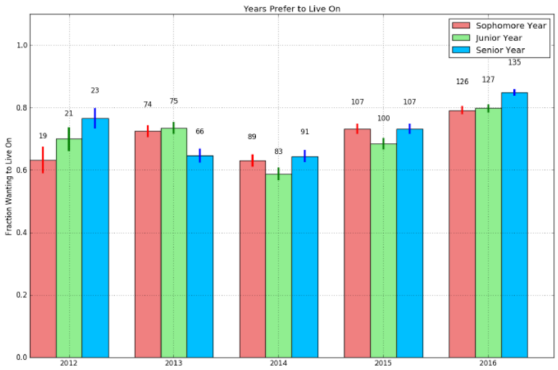
[3]Caltech Design and Construction Office

[4]For the purposes of this report, "unafilliated" housing is housing that is not connected officially with a House and is open to all undergraduate upperclassmen through the external lottery. Currently, this includes Marks and Braun, the Del Mar and Chester apartments, and the portion of Avery that is assigned through the campus-wide lottery.

live on-campus, but do not, suggesting that these students were not able to access on-campus housing when desired.



Which Years Would you Like to Live on Campus?							
	house	nonhouse	chestercats	delmar	mb	oca	offoff
Sophomore	0.796	0.556	0.622	0.333	0.722	0.533	0.482
Junior	0.801	0.492	0.514	0.400	0.750	0.489	0.339
Senior	0.835	0.508	0.595	0.467	0.750	0.400	0.393



Which Years Would you Like to Live on Campus?					
	2012	2013	2014	2015	2016
Sophomore	0.633	0.725	0.631	0.733	0.792
Junior	0.700	0.735	0.589	0.685	0.799
Senior	0.767	0.647	0.645	0.733	0.849

The Bechtel Occupancy survey indicates that there is a notable demand for on-campus housing in the undergraduate population. Currently, the options for on-campus or almost on-campus housing include the eight UG Houses, Marks and Braun, the portion of Avery which is assigned during the at-large housing lottery, and the Del Mar apartments (which are technically off-campus but are immediately adjacent to campus and several lab/instructional buildings). The latter two of these options will be eliminated in the coming year, leaving only Marks-Braun for students who wish to live on-campus but outside the Houses. The data also indicates that students are interested in non-house options for on-campus living in Bechtel. Nearly a third of respondents currently living in the Houses said that they would prefer to live in a House-affiliated "colony" in Bechtel[5] over their present living arrangement. Additionally, 15% of those students said that they would prefer to live in an unaffiliated single room in Bechtel over their current residence. This indicates that a non-negligible number of students currently living on-campus in the Houses would express a desire for on-campus options other than the House system in Bechtel.

[5]These "colonies" will be similar to OCAs. Currently, "off-campus alleys" (OCAs) are communities of students who are affiliated with a specific House, living off campus together in a Caltech-owned apartment or small house. Their occupancy is determined by the House's internal roompicks process. These will be eliminated beginning in 2018, with most of the space being re-purposed for graduate student housing.

3 The Rotation Process

3.1 Current System

Currently, the Rotation process seeks to maximize the potential for prefrosh-upperclassmen interactions in a short period of time. Rising first-year students attend a dinner (or lunch/"linner") at each of the eight Houses, and most attend the optional desserts hosted by the Houses. Furthermore, the Houses have the option to host events for prefrosh to attend. Two extra dinners at the end of the Rotation period can be used as free dinners so prefrosh can revisit a House if necessary. The process takes ten days.

3.2 Potential Issues

With the creation of new Houses, the Rotation process would be affected regardless of the number of new Houses created. At minimum, the process would need to accommodate the additional dinners and activities that the new Houses would bring. This would require careful scheduling to ensure that the process can be completed in a timely manner. This could be remedied by adding additional "linners" during the week before classes start. Furthermore, the Bechtel Residence will House nearly a quarter of the on-campus population, meaning that each House would receive a smaller number of freshman than they currently do. In the long run, this would slightly shrink the size of each House since each successive class of freshmen after such a change would be smaller than the current numbers. This would, however, allow each House to accommodate more of its upperclassman members on campus.

For example, if all 212 Bechtel beds are allocated to the creation of new Houses, the total number of House-affiliated beds on campus would be 883, enough for 90% of Caltech's current undergraduate body of 979 to live in House-affiliated rooms. To give each House the fairest share of frosh would be to divide the Freshman class proportionally among the Houses. If the Bechtel Houses were added to this, the distribution of a class of 236 incoming freshmen after a rotation would look like Table 1 (regardless of how Bechtel is divided into Houses):

House	Total	Frosh
Avery	134	36
Blacker	64	17
Dabney	64	17
Fleming	80	21
Lloyd	80	21
Page	88	24
Ricketts	70	19
Ruddock	91	24
Bechtel	212	57
Total (non-Bechtel)	671	179
Total (incl. Bechtel)	883	236

Table 1: Estimated number of freshman residents by House

In this case, all of the existing Houses would see a decrease in their incoming freshman class. Whether this would be beneficial or detrimental to inter- and intra-class bonding, as well as the effect on the House communities as a whole, is unclear.

4 Creation of a Bechtel Living Community through Houses

4.1 Safety Net and Community

One of the benefits of adding additional Houses is that Caltech already has a tried-and-true framework for offering mental health support and establishing a sense of community in the context of a House. Bechtel will have a total of seven RA and RLC apartments. The roles of these members of the safety net are well-established; adapting them to new houses would be straightforward if not trivial. Bechtel actually has a higher ratio of RAs to residents than most of the Houses do currently, which should help solidify that network of resources.

Bechtel will also have Peer Advocates (PAs)[6] As of the writing of this report, the plan is to have six PAs for Bechtel. It has been recommended that the PAs be given rooms in the detached singles within Bechtel to make them easier to access and provide more privacy when students are meeting with PAs for guidance. If Bechtel were used for the creation of new Houses, they would presumably divide the six PAs evenly between them; that is, if there are two Houses, each would have three PAs, and if there were three Houses, each would have two. If there were four houses in Bechtel, it becomes more dificult to adequately divide PAs between them. Currently, most of the eight Houses will be getting four PAs, with a few exceptions. This would possibly create some challenges for the Bechtel PAs, who would have a more limited scope and smaller numbers.

It is currently planned to have a Bechtel representative on the Stewardship Committee, regardless of the chosen model. StewComm acts as an interface between the undergrad Houses and the Housing and Maintenance Offices, and is a forum for discussing concerns on both sides relating to the upkeep and conservation of the building and common resources. If Bechtel is partitioned into multiple houses, then each one would be given a spot on the Committee to adequately address the needs of each House, although it would be highly recommended that these reps be in close contact with one another due to their shared living space.

Each of the new Houses would be required to elect two Board of Control (BoC) representatives and a Conduct Review Committee (CRC) representative as the eight Houses currently have. They would also have a representative on other student government committees like the IHC or Review Commtittee.

4.2 Seeding the New House(s)

One of the challenges of creating a new community in Bechtel is the method for initially filling (or "seeding") the Houses so they grow into cohesive communities. There is no modern-day example from Caltech which we can emulate; as mentioned above, Avery House was created as unaffiliated housing and had already organically developed a sense of community before petitioning to become a House. The North House creation process, which is more analogous to the Bechtel situation, was clunky and time-consuming for the administrators and students involved.

An alternative method for seeding the Houses would be to allow the Bechtel Houses to be filled via a lottery (either separate from or part of the general unaffiliated lottery). This could be done as single

[6]For context, the PA program will be training its inaugural class in the spring and fall of 2018. It is similar to the old Upperclassmen Counselor (UCC) program, except the training is more intensive - a two term class rather than a two day seminar. The PA program, unlike the UCC program, will be open only to rising sophomores and juniors, and will have a predetermined number of Advocates per House/residence, unlike the UCC program which had flexible numbers per House (typically 6-12 UCCs per house).

students, although this may cause difficulty with establishing a clearly-defined culture or support network, especially in the early years.

One can perhaps draw inspiration from Harvard's House sorting process - when Harvard freshmen are assigned to Houses, they are assigned in blocks with students they already know to help foster a community right off the bat. The Bechtel House lotteries could therefore be filled by suite rather than by individual room, with groups of students entering the lottery as a block to acquire a suite together. This would still leave room for potential issues if the suite groups become too modularized and fail to connect with those in the suites around them.

4.3 Potential Logistical Challenges

The prospect of dividing the Bechtel Residence into new Houses offers unique challenges, given the design of the building. There are a number of features that necessarily make any Bechtel House(es) different from the existing Houses.

The most obvious challenge is the building's size. Bechtel's design has 212 beds for students, not including RA and Faculty in Residence apartments. Compare this to bed counts in other Houses, and the challenge is evident; Bechtel is 2-3 times larger in terms of bed count than most of the other Houses, whose most recent bed counts are given in Table 2.

Avery	Blacker	Dabney	Fleming	Lloyd	Page	Ricketts	Ruddock	Total
134	64	64	80	80	88	70	91	671

Table 2: Bed counts of the eight UG Houses at the conclusion of the 2016-2017 school year

In terms of community building, Bechtel's size also presents a challenge. Caltech's residential life model strongly values the establishment of a community support network and the nurturing of relationships among peers. For many students, this takes place through the House system. It is necessary, therefore, to consider the size of any proposed Houses, and their distribution throughout the building.

This introduces another key difference between any proposed combination of Houses in Bechtel and the existing 8 Houses. While there are connections between the current Houses, there are fairly clear boundaries between each House. This would not be true for the Bechtel Residence, which cannot be easily divided into self-contained Houses. Any reasonable division of the Bechtel Residence into Houses would necessarily involve an unprecedented boundary system. The implications for the development of House culture in these cases are unknown and largely unpredictable, as will be discussed on a case-by-case basis.

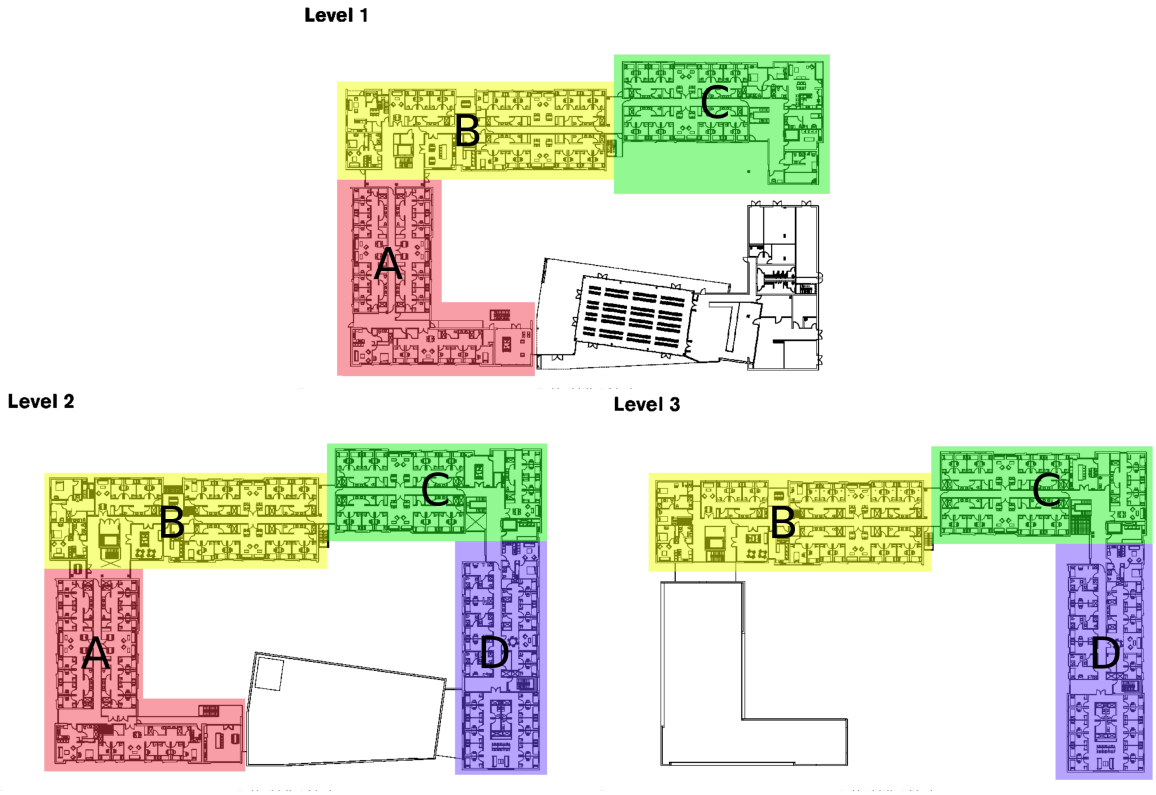
In addition, any proposal for Bechtel House(s) would need to contend with the problem of distributing amenities among the Houses. This is to say, each House should have approximately equal access to kitchens, lounge spaces, and laundry facilities. The distribution of each of these shared resources would be in contrast to the existing House system. Some spaces, such as laundry facilities, study rooms, and activity spaces (in the Student Activity Center beneath the South Houses) are currently shared between the Houses without issue. However, each House retains agency over their own kitchenettes, lounge, and courtyard, and is given a fair amount of control over the contents of these spaces (communal "alleyware" or cooking supplies, gaming consoles in common areas, etc.) in exchange for a heightened level of responsibility for the maintenance of these spaces. Houses can negotiate improvements to their common areas or atone for damages through the student-run Stewardship Committee. If Bechtel becomes more than one House, the allocation of shared

spaces would be an issue that has not before been addressed in the student Houses. How would these spaces be divided? Would they be divided up and assigned to the individual Houses, or be treated like inter-House resources (e.g. the laundry facilities and study rooms in the SAC)? How would the new Houses handle collective responsibility for these spaces with respect to the Stewardship Committee?

5 Proposals for Partitioning the New House(s)

By examining the floorplans for the Bechtel Residence, several potential allocation plans have been devised for the new House or Houses. The number of Houses in these plans ranges from one to four, with different features accentuated in each plan. There were three main subtypes for the plans: those that kept the proposed House sizes as equal as possible, those that sought to divide common areas equally, and those that prioritized geographic unity (either by floor or by "connectedness" of House segments). The proposed layouts are certainly not exhaustive; that said, these were determined to be the most reasonable potential layouts for building lasting communities.

The Bechtel Residence was purposefully designed in a series of connected subunits such that the building can be divided into multiple zones to be used for different purposes. To facilitate our explanation below, we assigned letters to each zone in the building. Additionally, we will use a letter-number tuple to describe each floor within a particular zone.[7] As an example, C2 would refer to the section of the second floor that is in zone C. These zones can be seen on the map below.



We assessed the distribution of common resources (laundry facilities, lounges, kitchenettes, RA apartments, etc.) as well as the number of beds in each of the subunits, summarized in Table 3.

Using this information, the House plans were created to try to spread these resources as evenly as possible. The seven plans can be briefly summarized as follows:

[7] After composing the House layout plans, we became aware that the construction/design team for Bechtel used a similar method of assigning letters to the subunits of the building; readers who are familiar with that system should note that those designators are slightly different from the ones used here.

Subunit	Beds	RA/RLC apartments	Kitchens	Laundry Rooms	Lounges/ Other
A (total)	44	2	1	0	1
A1	22	1	0	0	1
A2	22	1	1	0	0
B (total)	62	3	1	3	5
B1	20	1	1	1	1
B2	20	1	0	1	2
B3	22	1	0	1	2
C (total)	58	2	1	3	1
C1	18	0	0	1	0
C2	20	1	0	1	1
C3	20	1	1	1	0
D (total)	48	0	0	0	0
D2	24	0	0	0	0
D3	24	0	0	0	0
Floor 1	60	2	1	2	2
Floor 2	86	3	1	2	3
Floor 3	66	2	1	2	2
Total	212	7	3	6	7

Table 3: Contents of Bechtel Residence by block and by floor. Note that Block D does not contain any common areas/resources (like RAs) and is consequently combined with other blocks in each of the plans below.

1. Floor-by-Floor: Each of the three floors becomes a House. Horizontal continuity and even distribution of lounges and kitchens.

2. Block Split: Each block becomes its own House. Vertical continuity, but significant disparity in distribution of common spaces.

3. Block Split with Floor 3: Same as Block Split, but Floor 3 is an additional House. Divides lounges evenly but not kitchens or laundry facilities.

4. Two-House: Blocks A and B, and Blocks C and D become Houses. Divides kitchens evenly.

5. Three-House (Two House + First Floor) : Same as Two House, but Floor 1 is an additional House. Horizontal design with kitchens distributed evenly.

6. Three-House (Two House + Third Floor) : Same as Two House, but Floor 3 is an additional House. Poor distribution of common spaces.

7. Four-House Hybrid: The first and third floors are Houses, and the second floor is divided as it is in the two-House plan. Even distribution of lounges and other common areas.

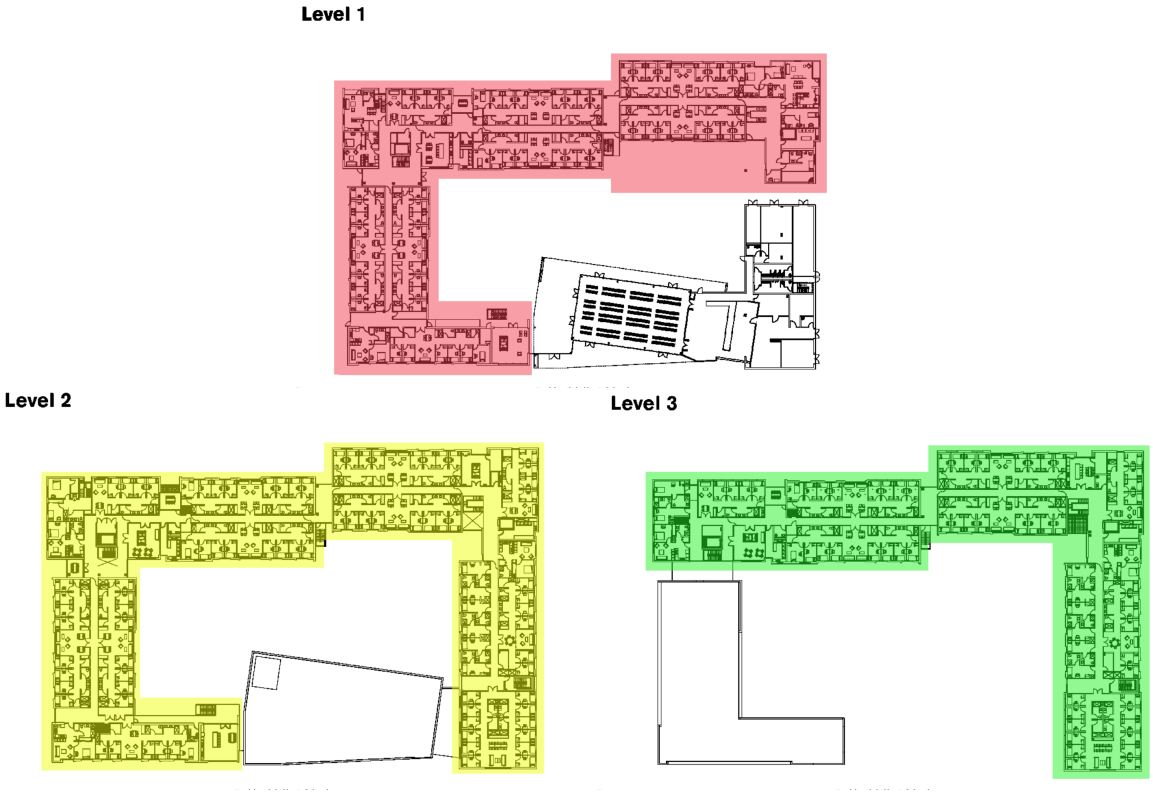
8. One House: Bechtel becomes one gigantic House, with several gigantic problems.

5.1 Floor-by-Floor

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	60	2	1	2	2
Bravo	86	3	1	2	3
Charlie	66	2	1	2	2

This plan divides Bechtel by floor so that each of the three floors is its own House. This design is fairly consistent with the current sizing ranges, with two of the new Houses being close in size to the South Houses (if a little on the small side) and one being roughly the same size as the North Houses. The RA/RLC apartments are divided evenly between the Houses, with an additional RA living in the larger of the three Houses. The kitchens, laundry facilities, and lounge areas are also evenly divided. It should be noted, however, that the layout of the kitchens is such that a student might be on the opposite side of the building from their House's designated kitchen, and might be more inclined to use the nearby kitchens on the floor above or below them.

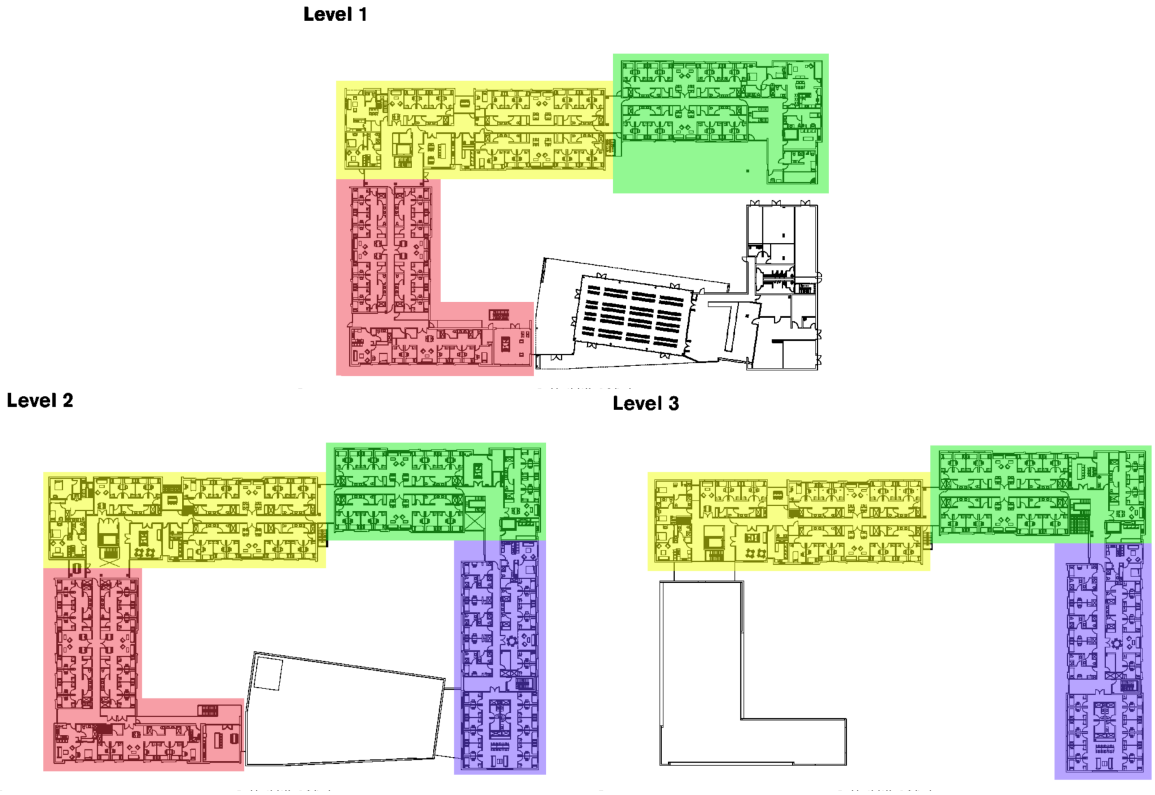
This plan was loosely modelled on MIT's East Campus dorms, where students feel a strong affiliation and sense of community to their floormates. The often-cited reason for this is the ease of interacting with others on your own floor rather than between floors (where stairwells created a closed barrier). The East Campus halls are, however, different from those of the Bechtel Residence due to their linear layout.



5.2 Block Split

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	44	2	1	0	1
Bravo	62	3	1	3	5
Charlie	58	2	1	3	1
Delta	48	0	0	0	0

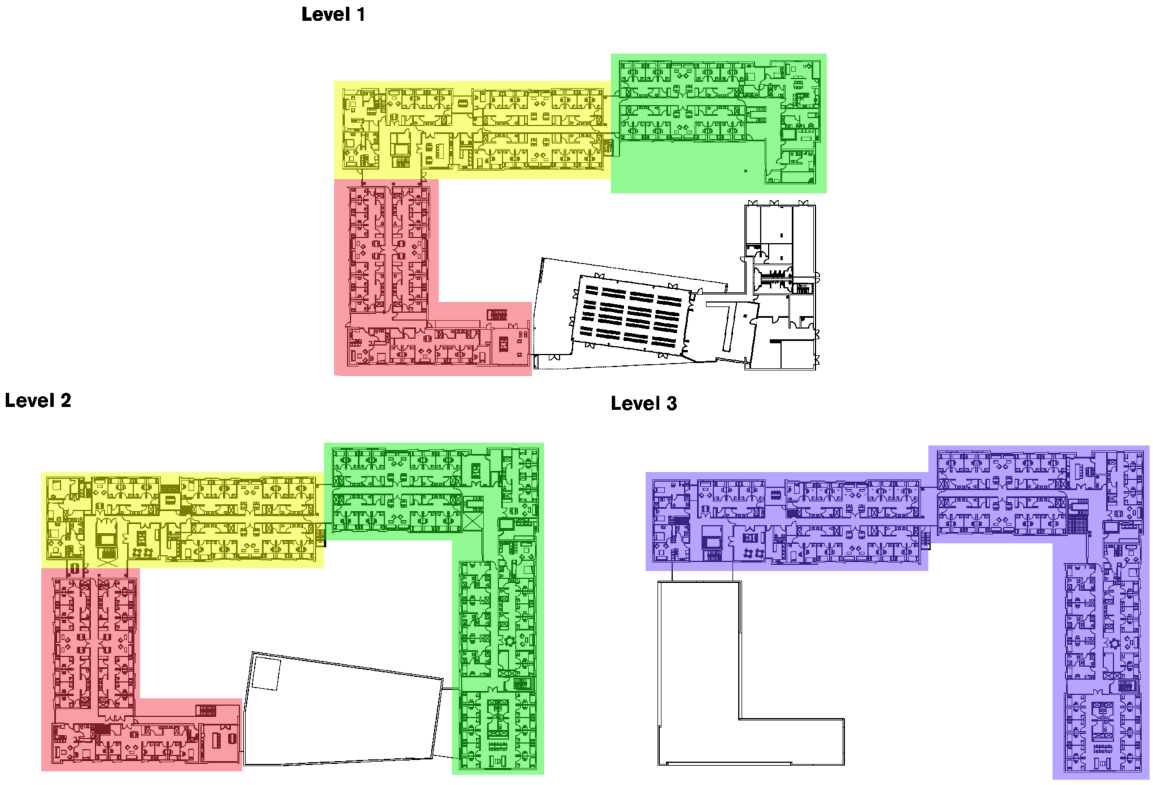
This plan splits the Houses vertically, based on the building's five "blocks", referred to as blocks A, B, C, and D. In this plan, each block becomes its own House. This results in four Houses, each of which would be smaller than any of the eight existing Houses (though "Bravo" House would be within a hair of the size of Dabney and Blacker). This split results in a House (Delta) without any RA apartments, kitchens, laundry rooms, or lounge spaces. This is clearly not optimal.



5.3 Block Split with Floor 3

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	44	2	1	0	1
Bravo	40	2	1	2	3
Charlie	62	1	0	2	1
Delta	66	2	1	2	2

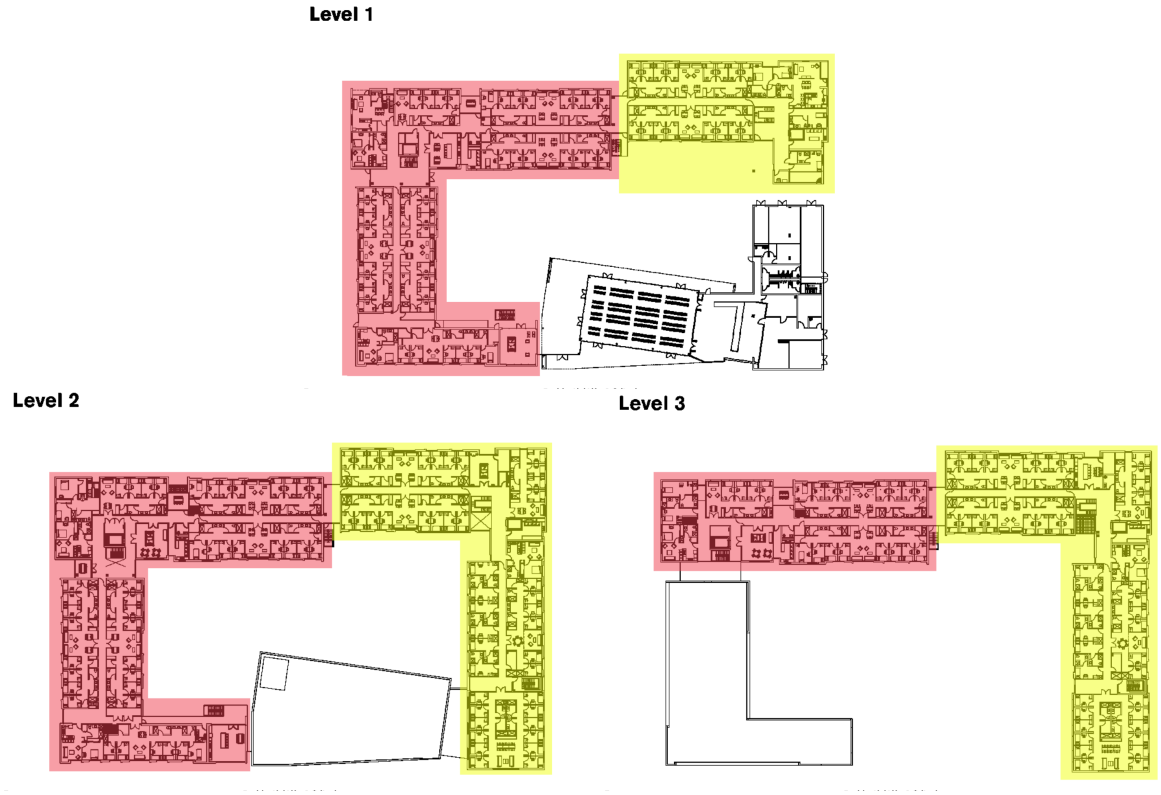
This plan splits Bechtel into the same Houses as the Block Split, except that the entire third floor becomes its own House. Under this split, two of the Houses are roughly the size of the smaller South Houses, and the other two are even smaller. These smaller House sizes could in theory promote the development of strong communities. While this plan splits utilities roughly equally, it does result in a House without a kitchen and a House without any laundry rooms, both of which would hurt the Houses' ability to form an independent identity, as students from those Houses would be reliant on other Houses for those basic utilities.



5.4 Two-House

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	106	5	2	3	6
Bravo	106	2	1	3	1

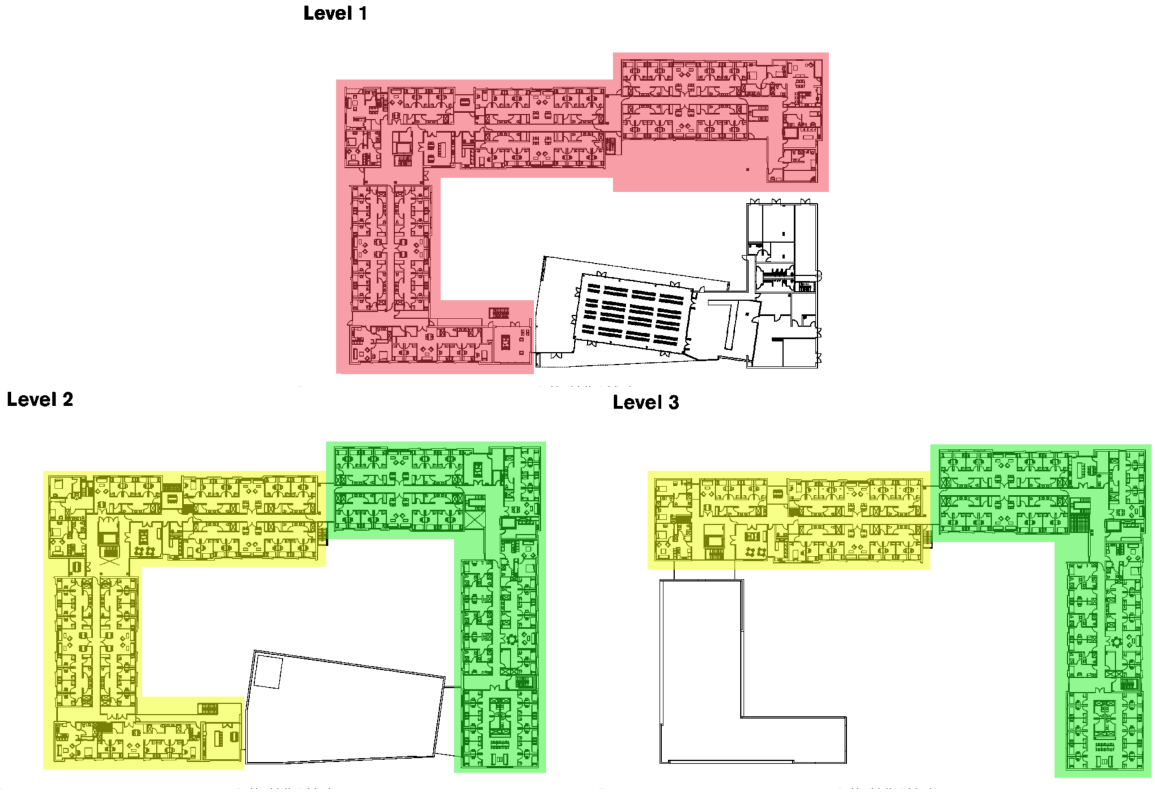
This plan splits Bechtel into two large Houses, each roughly halfway between Avery and the North Houses in size. This split occurs between blocks B and C, resulting in one House (Alpha) composed of blocks A and B, and one House (Bravo) consisting of blocks C and D. The Houses are more self-contained and clearly divided than in some of the other plans, since entire blocks are devoted to each House, across all floors in that block. This plan results in two Houses that are equal in bedspace, but heavily unequal in RA and lounge distribution. "Bravo" House would be severely disadvantaged in terms of support for its students and spaces to study and/or relax in.



5.5 Three-House (Two House + First Floor)

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	60	2	1	2	2
Bravo	64	3	1	2	4
Charlie	88	2	1	2	1

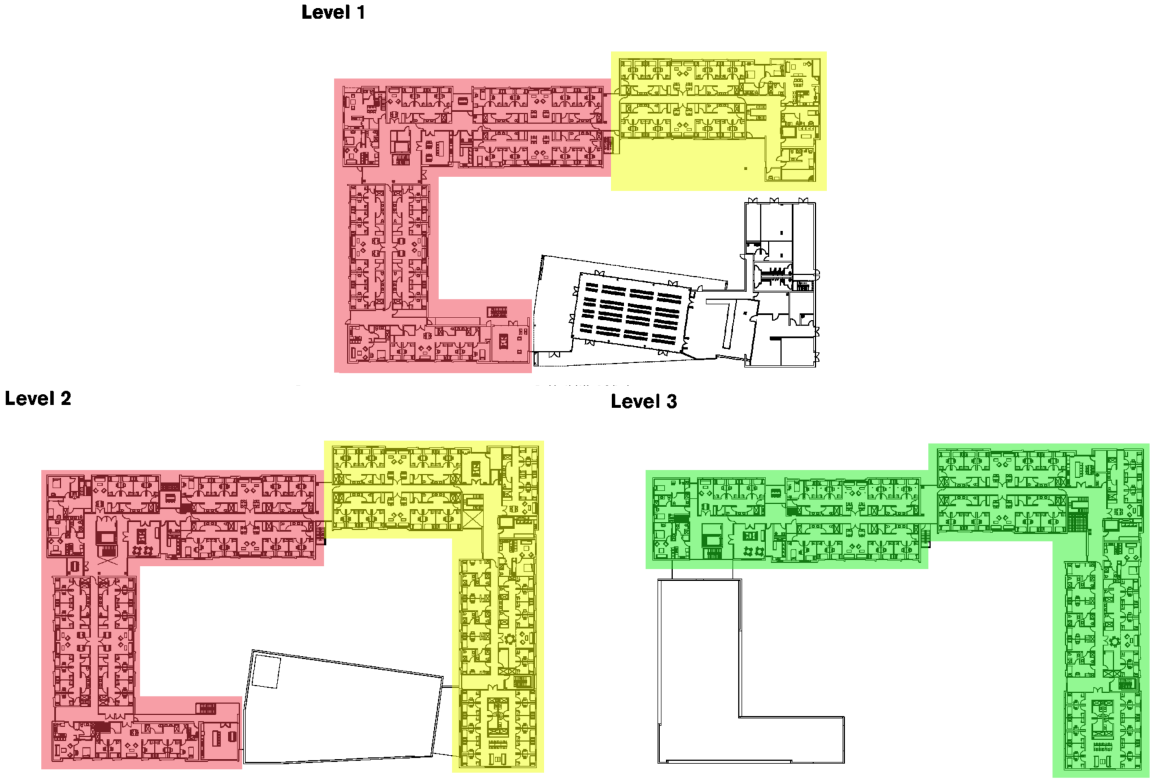
This plan is a modification of the Two House plan that keeps the entire first floor as a single House, then divides the second and third floors by block. The House on the first floor (Alpha) would be roughly the size of the smaller south Houses, as would Bravo House (which includes the second and third floor portion of blocks A and B). The final House, Charlie, would be composed of blocks C and D and would be as large as a North House. This plan allocates resources nearly equally between the Houses, except that it gives Charlie House, the largest House, the least number of lounge spaces. Apart from this inequality, this plan is one of the more well balanced ones.



5.6 Three-House (Two House + Third Floor)

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	84	4	2	2	4
Bravo	62	1	0	2	1
Charlie	66	2	1	2	2

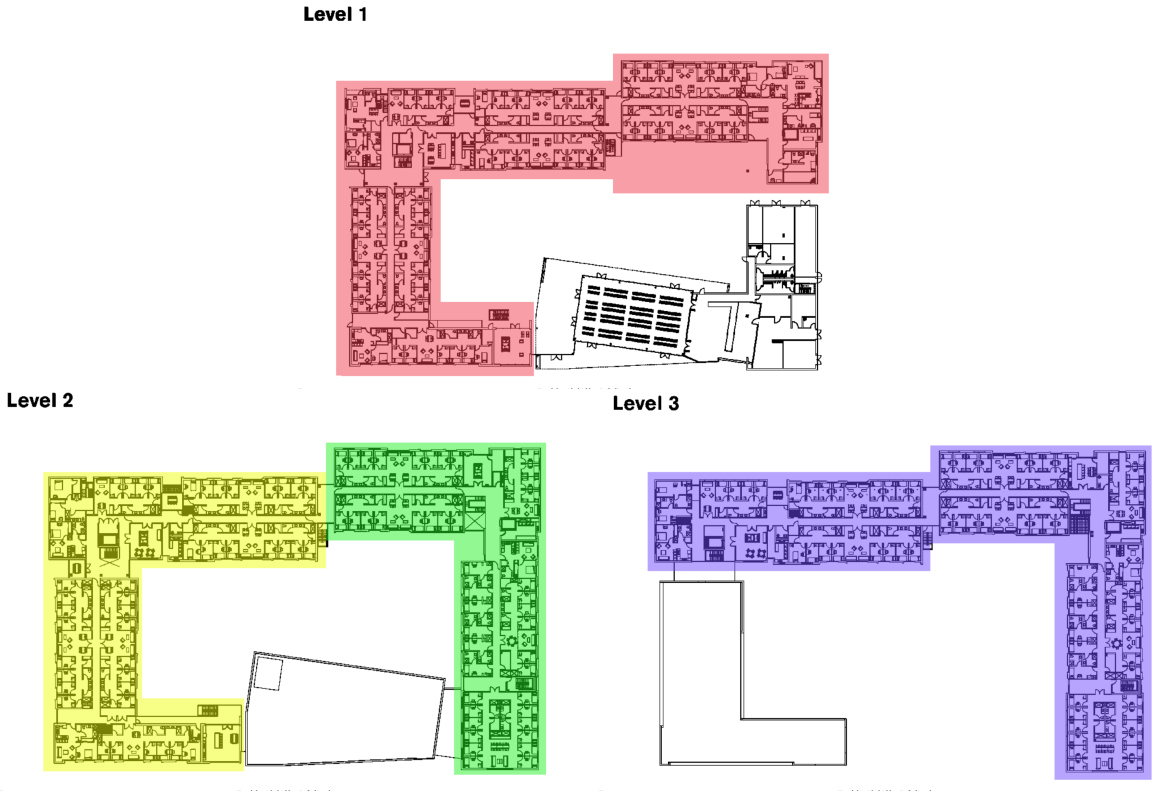
This plan is another modification of the Two House plan, this time with the third floor as a House. This plan divides the first two floors along the same B/C split as the Two House plan, creating one House that is the size of the North Houses and one that is the same size as the South Houses. One of the Houses (Bravo) doesn't have a kitchen, has only one lounge/study space, and only has one RA.



5.7 Four-House Hybrid

Houses	Beds	RA/RLC	Kitchens	Laundry	Lounges
Alpha	60	2	1	2	2
Bravo	42	2	1	1	2
Charlie	44	1	0	1	1
Delta	66	2	1	2	2

Under this plan, the first and third floors are each a House. The second floor is divided along the B/C split creating one House from A and B, and the other from C and D. One House (Charlie) lacks a kitchen, and has limited access to common areas. Both Bravo and Charlie are notably smaller than the other two, and significantly smaller than most of the existing Houses.



5.8 One House

One plan is to turn Bechtel into one large House. However, we must note that Bechtel would House roughly a quarter of the on-campus population, and is almost twice as big as the largest current House, Avery. A larger population would lessen the sense of community that the Houses strive to create, which would detract from the residential life experience at Caltech. Additionally, such a large student population would be difficult to manage and communicate with due to its size. Finding a location to hold House-wide events or dinners would also be difficult due to the sheer size.

Consequently, there is no reason to make Bechtel one large House when there are other plans that foster a stronger sense of community and would be easier to organize.

5.9 Conclusions

There exist several notable challenges in partitioning the Bechtel Residence into individual Houses. The most significant is that it was designed to be a single cohesive residence, and is not partitioned directly into multiple distinct units with equal access to common areas and other facilities. Despite creating eight different possible layouts, the Committee was unable to find one that adequately addresses the needs of a multi-House model and creates a comfortable environment for students. An important part of House identity and stewardship is the sense of "ownership" a House's residents take in their living space and the resulting feeling of unity and cohesive community that results. Under these plans, it is difficult to make sure students in each House have convenient access to a kitchen as well as other common spaces like lounges. The few plans that achieve this end up distributing RAs and other safety net resources disproportionately. A combination of several Houses coexisting in Bechtel would result in issues with stewardship and sense of House community, which is counter to the goals of the UG House system.

6 Recommendations

The Committee recommends that the Bechtel Residence not be used in its entirety for the creation of new Houses, due to the logistical issues associated with partitioning space within the building for the creation of House-like communities, the difficulty with building a community in a residence that lacks an established pool of residents, and the lack of strong demand amongst respondents to the Bechtel Occupancy Survey for such a large volume of in-House residential options. One potential alternative would be to divide the Bechtel Residence into multiple zones, each with a different type of housing. To do this, one of the partition plans described in this report could be selected, and one or more of the proposed Houses could be instead used for another purpose, such as unaffiliated housing or House-affiliated "colonies". Caltech's current housing options includes a system somewhat similar to this; Avery House includes both a House-affiliated section (the bulk of the available beds in the building) and an unaffiliated "off-campus" section which is filled through the external housing lottery.

The Committee cautions against the creation of additional Houses given the goal of improving or adding to the Caltech UG residential life system because it is not apparent what improvements this plan could bring about. Since this plan is an extension of the current UG House system, we do not anticipate that it will provide students with more varied options for their ResLife experience. Additionally, extending the House system into Bechtel limits the space available for other residential options. Given that some residential options (Del Mar Apartments, Chester Apartments, OCAs) will no longer be available to undergrads, the Committee believes that there are more effective and desirable housing options that the space could be used for. In particular, the ability for upperclass students to select on-campus housing options outside of the House system should be preserved. Furthermore, the Committee recommends exploring options that have the potential for positive change in the residential life system, rather than maintaining the status quo. As such, it is the recommendation of this subcommittee that the Bechtel Residence not be allocated for the creation of a new House or Houses.

7 Appendix

7.1 Tech Article: Guiding Principles for Undergraduate Residential Life

The following is the modified version of a Tech Article, Guiding Principles for Undergraduate Residential Life, which was published in the Fall of 2017 by the COUCH. The article details the guiding principles behind each COUCH report as well as the unified Polaris Plan developed by the committee.

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 it's 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's 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.

7.2 Bechtel Residence Floor Plans

The Bechtel Residence floor plans are included beginning on the next page. The three-story Residence will have 212 beds for undergraduate students, seven RA and RLC apartments, and two faculty-in-residence apartments. The building has its own dining hall and servery, as well as communal resources like laundry facilities, study areas, and kitchenettes.

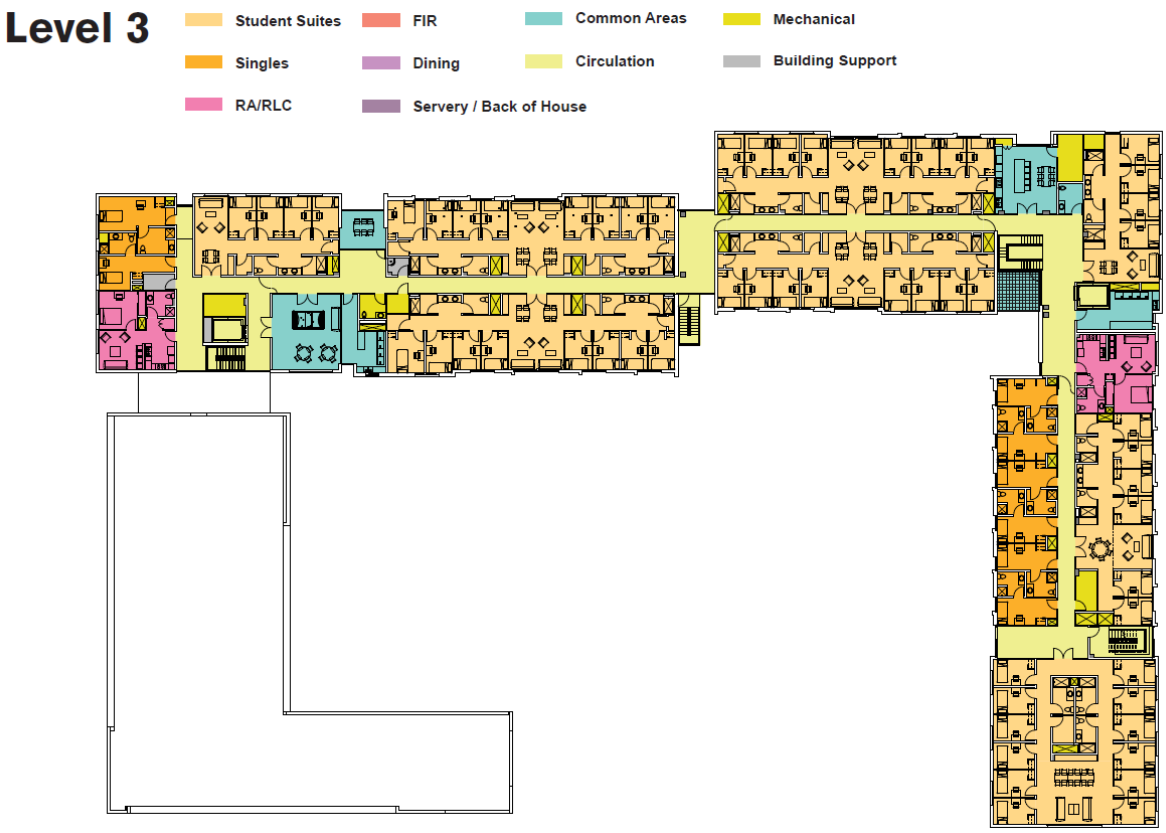
Level 1


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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