*flex*Dorm

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The 21st Century Project of the Association of College and University Housing Officers–International (ACUHO-I) is a multi-phased initiative leading to the construction of a new, state-of-the-art residential facility for colleges and universities. Through the *flex*Dorm proposal, JLA continues to consider the future role of campus housing in helping to advance the excellence of American teaching, learning and research.

Grand Prize Design Award 2007
21st Century Project Design Competition
Jonathan Levi Architects, Boston MA

Introduction

Jonathan Levi Architects (JLA) is pleased to present the '*flex*Dorm', our grand prize winning entry for ACUHO-I's 21st Century Project competition for the dormitory of the future. We believe that the architecture of student residences will play a defining role in the future of the American college and university over the coming decades. At it's heart, *flex*Dorm is an attempt to embody the direction of contemporary learning in built form.

The spatial arrangement of individuals and the corresponding potentialities for the interchange of ideas affect the very nature of knowledge creation and dissemination. Fixed arrangements imply boundaries and inhibit spontaneous adaptations to new forms of knowing and communicating. Flexible arrangements, such as that offered by JLA's *flex*Dorm concept, help blur boundaries and accommodate the spontaneous groupings needed to support change and invention.

*Flex*Dorm is an architectural proposal imagined and coordinated at the room, building and urban scales. Its basic building block – manufactured modular construction – is an old tool yet to be utilized in the important efforts of academic communities around the country to economically expand access to the quality education. *Flex*Dorm also includes reasonable assumptions about the future feasibility of innovative details such as wall size interactive media surfaces and mutable partitions.
The *flex*Dorm plan is a call to think of academic building assets as readily alterable systems with components capable of shifting, for example, from undergraduate to graduate to faculty dwellings or from housing to academic to conferencing to student life uses.

Project Objectives

*flex*Dorm is a new type of college and university housing, designed to free students, faculty/administrators and college planners from the limitations of prescribed programming. Rather than forcing living and learning configurations into a predetermined building package, the *flex*Dorm's multi-level versatility allows for continuous adaptation to current needs.

For students, the *flex*Dorm will offer almost limitless lifestyle and learning possibilities. For any given semester, the dorm set-up can reflect a broad range of unit type mixes. Possible private bath unit type configurations with differing price points include singles, singles with living area, doubles with living area, triples quads, five and six-student suites. Using 'mini-doubles' with semi-private baths, capacity can be doubled while still retaining individual sleeping privacy and without resorting to stacked bed furniture. All types can be configured with or without in-room cooking and can therefore be easily tailored to undergraduate, graduate or faculty lifestyles. Within the units, maximum room lay-out flexibility is enabled by a system of moveable modular wall pieces. Combined with conventional furniture, these space-maximizing tools allow the individual student the ability to find her own balance of living, learning, group learning, dining and relaxation. The student is more fully the architect of her own space.

For faculty/administrators, the *flex*Dorm minimizes the risks of year to year planning while allowing the freedom to experiment with alternative living/learning models. The typical corridor and room relationship geometries, combined with movable partitions, enable the variable programming of a shared common zone as private living, kitchen, private dining, private conference, public lounge, public dining, group study or recreational space. At the campus level the *flex*Dorm's ground floor is based on the concept of open plan lease space intermixed with intimate-scaled academic courtyards. The courtyards are scaled to promote open air study and informal scholarly discourse. The open ground floor areas can be developed from year to year to compliment the complexion of the varying unit mixes above and might include, academic instruction space, faculty offices, large media resource study lounges, dining commons, fitness or convenience retail uses.

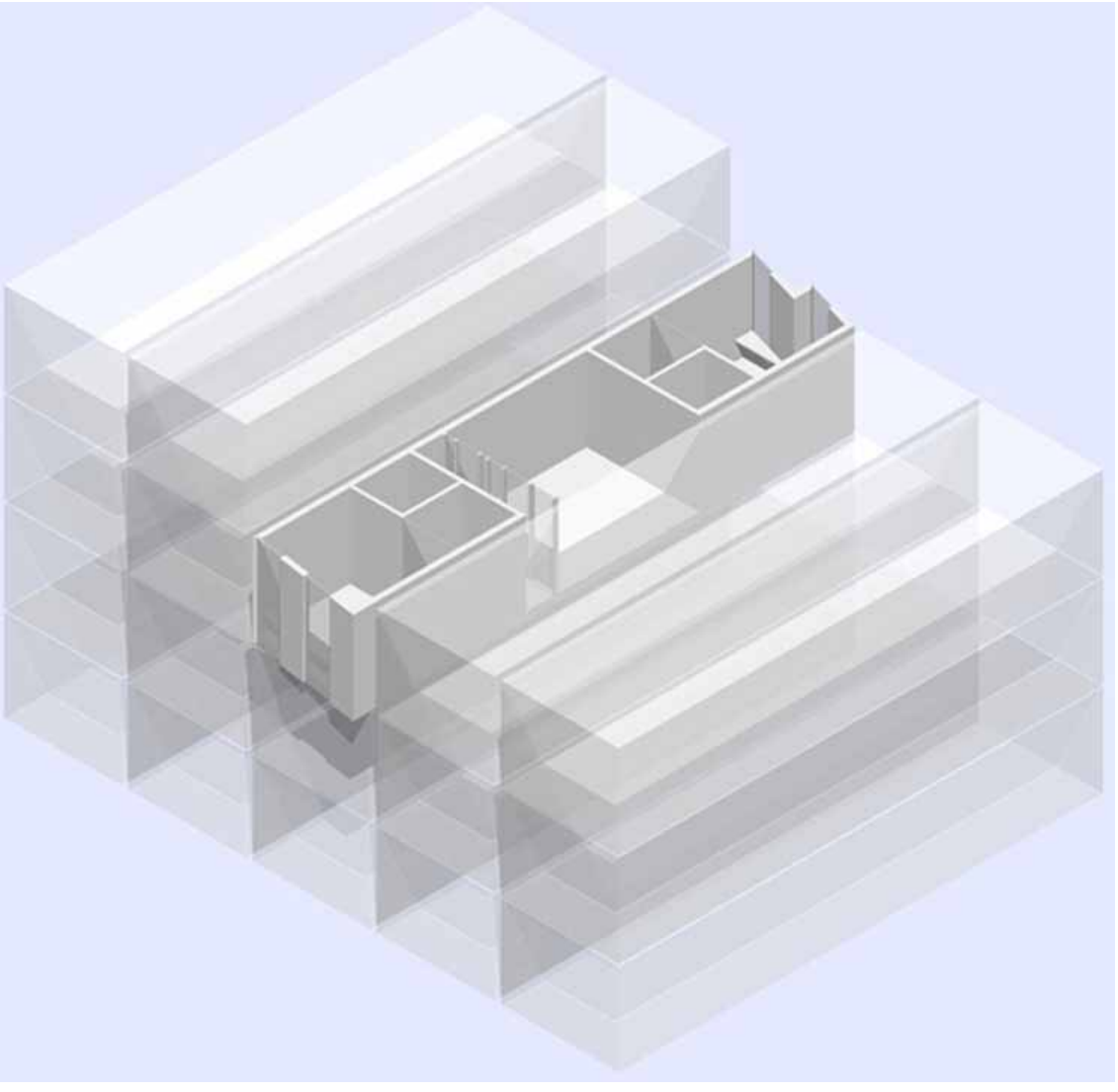
The adaptability of the *flex*Dorm means that university planners have an additional tool to use in responding to the changing long-term demographics and educational priorities of their institutions. Especially important is the flexibility of its common spaces to adapt to evolving informal and group learning pedagogies. As campuses grow and evolve, fixed real estate changes in its relationship to other campus components. F*lex*Dorm was designed for multiple institutional scenarios. These include undergraduate, graduate and faculty housing and any mixture of the three.

*flex*Dorm

*flex*Dorm technology incorporates advanced construction techniques as well as anticipating materials and technology which may arise in the future. The housing's modular construction cells are based on the dimensions and assembly method of modular home technology such as that used in the wake of hurricane Katrina. This method allows a majority of off-site construction to maximize factory quality control methods while reducing unpredictable on-site construction labor and pricing conditions. Construction schedules can be dramatically reduced and resulting project soft costs minimized. It is projected that the cost effectiveness of the project's manufactured construction scenario will allow application of the *flex*Dorm concept to emerging residential needs among community colleges and public universities.

The building construction is intended to incorporate future materials such as 'switchable mirror glass', smart wall projection and parts free floating heating and cooling valances. Ecologically responsive features include: interlocked windows to prevent cooling loss, stack ventilation chases, semi-conditioned public spaces, prefabrication waste minimization, green roof and courtyard stormwater retention.

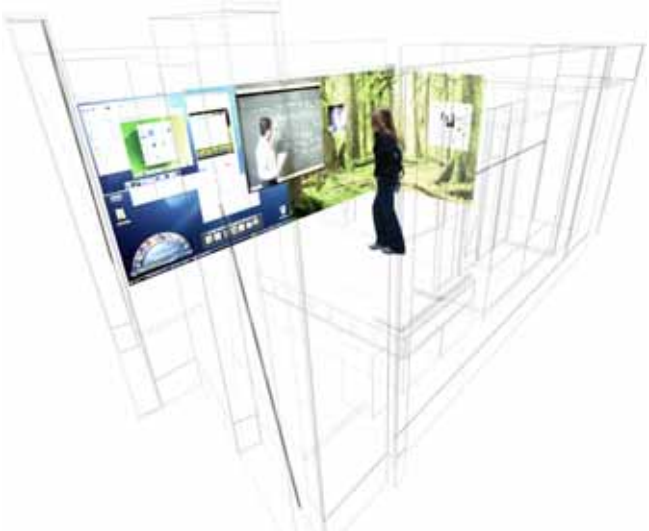
*flex*Mod



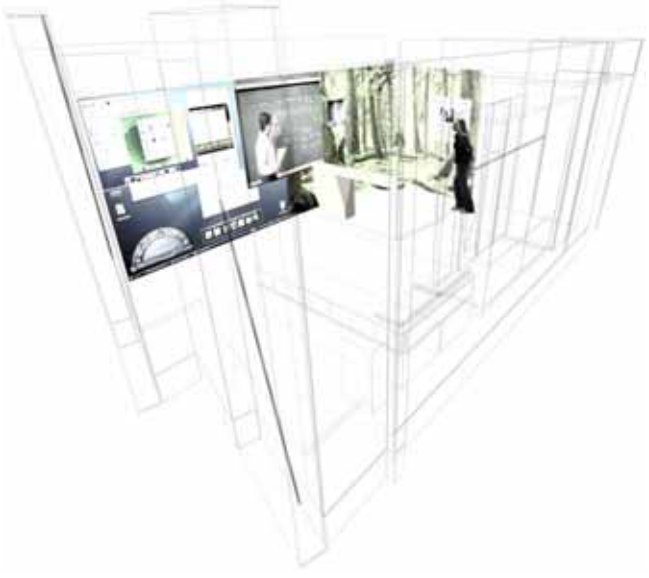
Modular Construction Cells

The building block of *flex*Dorm is the 14'w x 10'h x 54' long prefabricated module consisting of two student rooms with intermediate corridor section and common area. Modular construction eliminates tedious on-site labor, increases quality control, decreases costs and streamlines schedule. Necessary void spaces between walls and floors provide superior air and structure borne acoustic isolation. Intermediate voids are also used to route mechanicals and provide continuous stack plenums for natural convection ventilation.

*flex*Materials



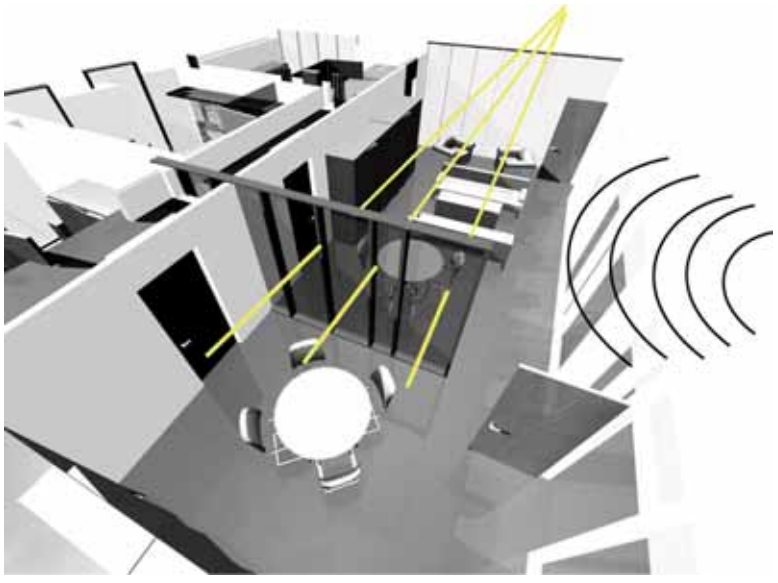
Smart Media Wall Covering



One Piece Sink/Toilet Fixture

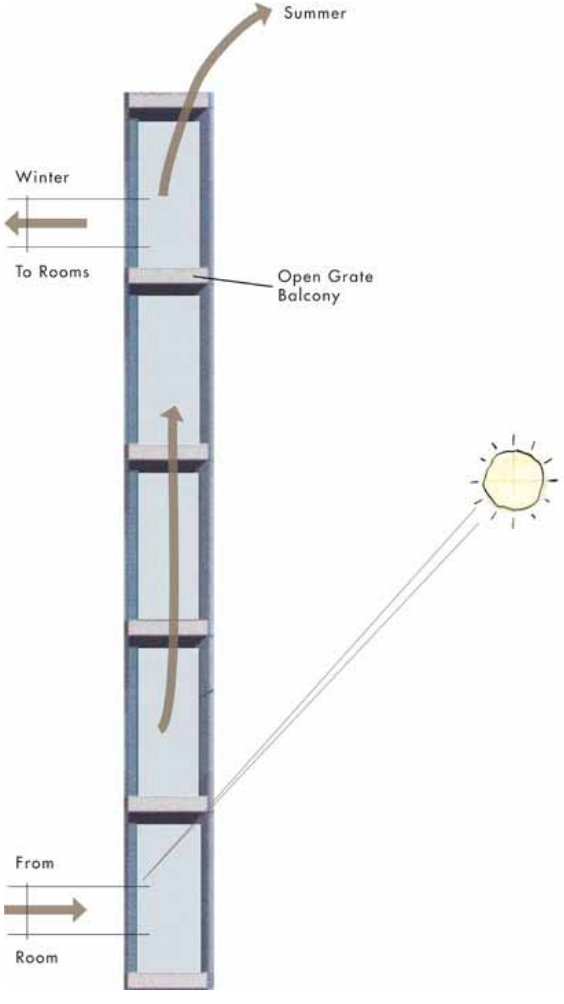
‘Instant Dry’ Grating

*flex*Materials

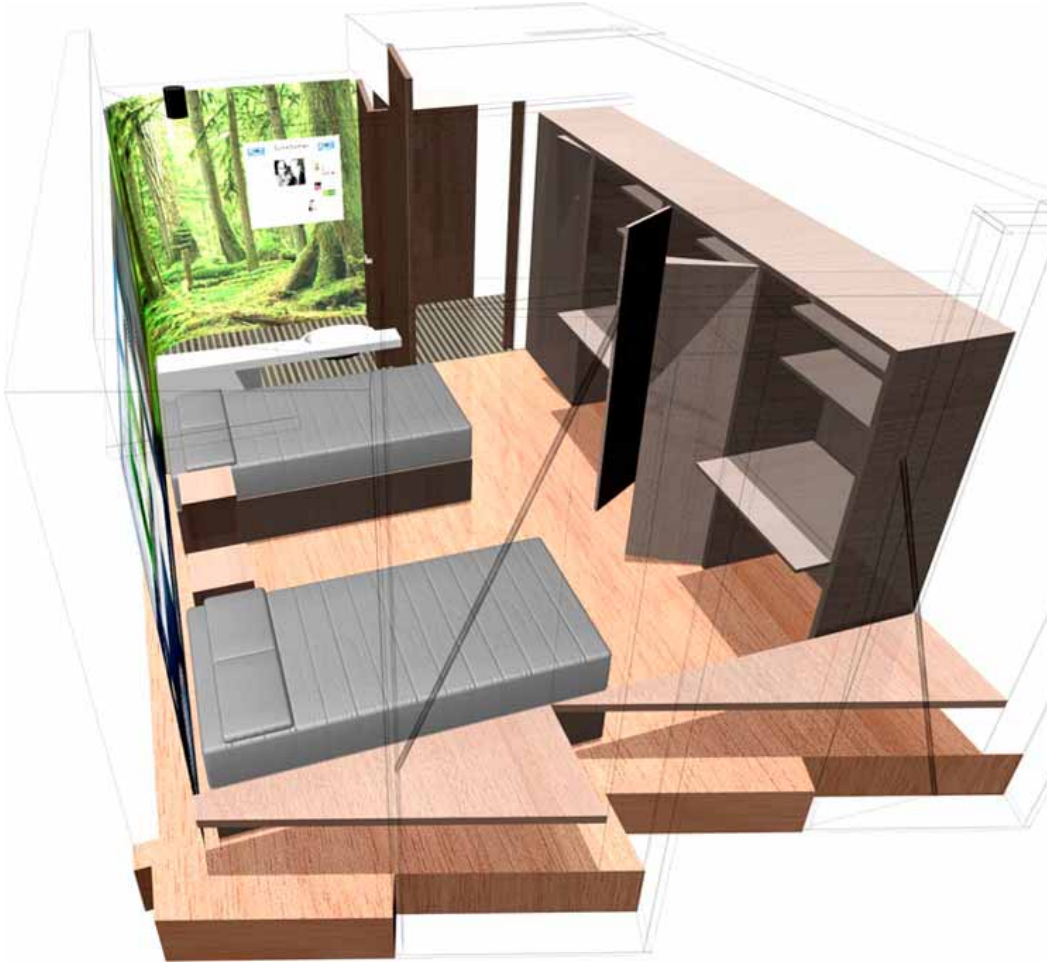


Moveable Translucent Acoustic Partitions

Switchable Mirror Privacy Glass



Solar Ventilating Breezeway



Modular room dimensions together with mobile modular '*flex*Trolley' furniture allow students a full range of options in setting up their room layouts. Before move-in the occupant will select from a suite of mobile *flex*Pod types to customize his or her space. On this and the following pages are a sampling of the wide range of lay-outs made possible by the *flex*plan's strategically calculated dimensions in combination with its planned furniture system.

Conventional Double

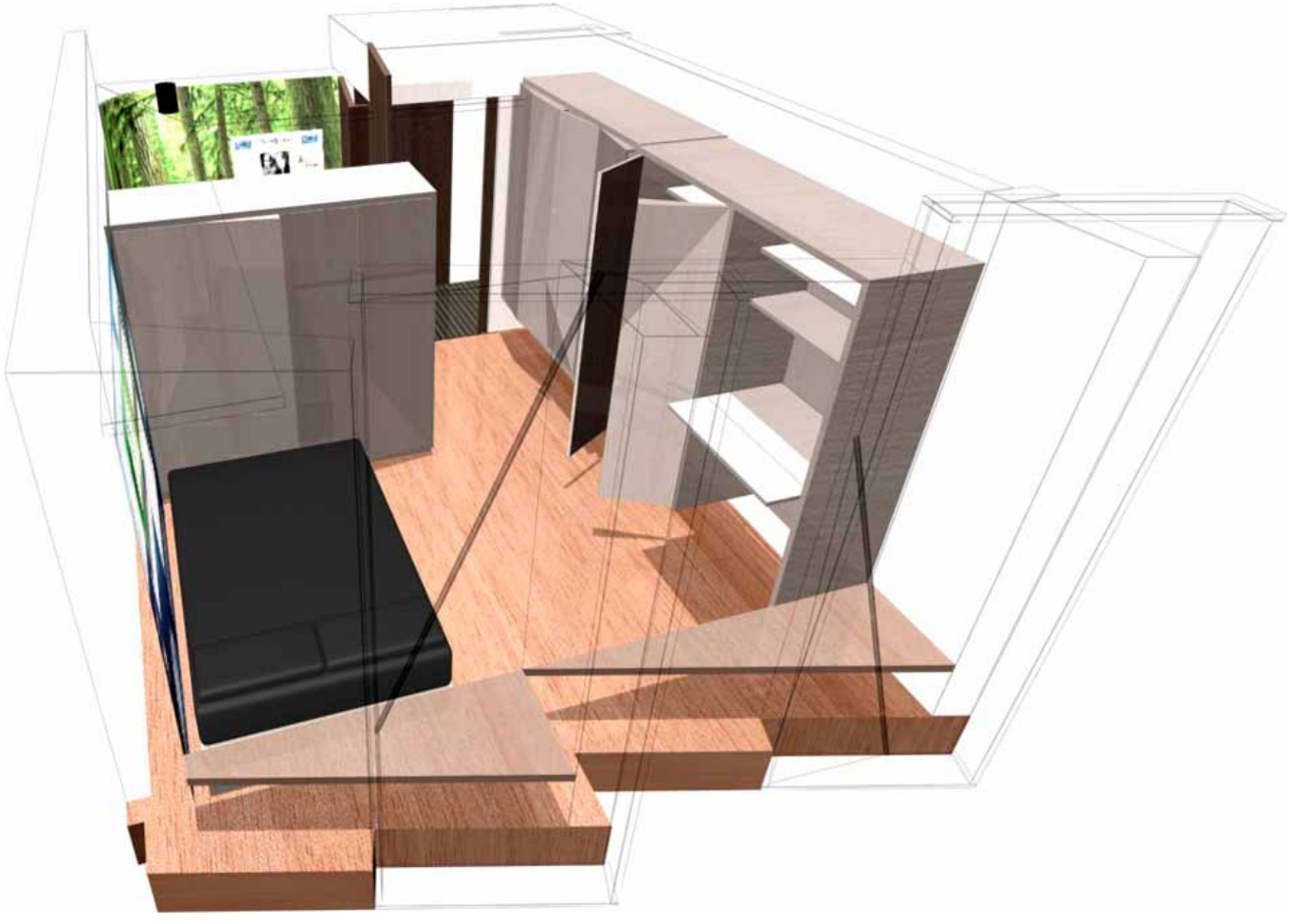
Full Size Bed

Eat-In with Kitchenette

Fold-out Single Bed with Sofa

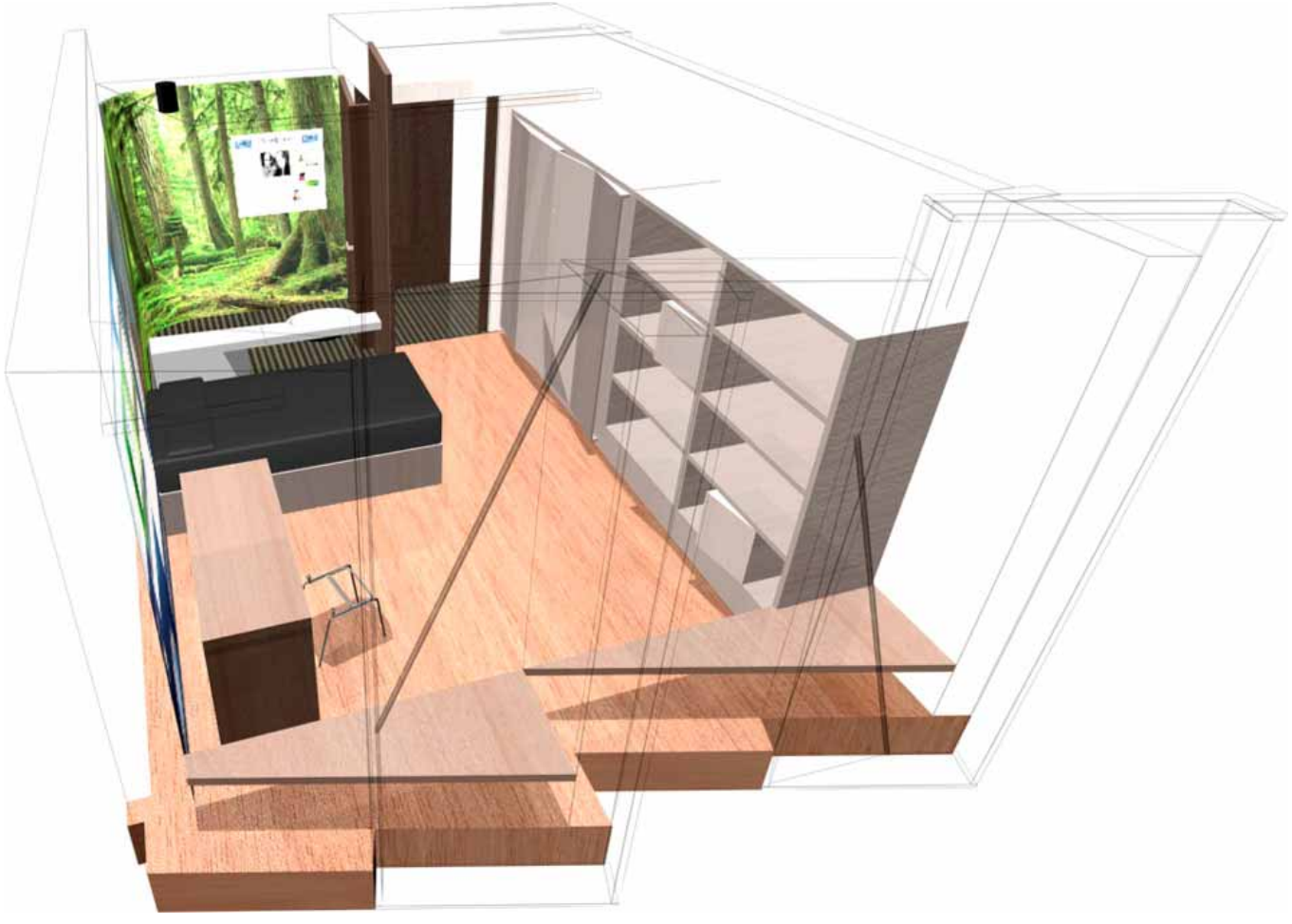
Fold-out Double with Sofa

Mini-Double with Double Carrel Partition (shown ghosted)



Double Bed with Maximum Storage

Alternative Conventional Double



Maximum Storage

*flex*Trolley

Maximum room lay-out flexibility is enabled by a system of moveable modular wall pieces or '*flex*Trolleys'. Combined with conventional furniture, these space-maximizing tools allow the individual student the ability to find her own balance of living, learning, group learning, dining and relaxation.

Single Bed (closed)

Double Bed (closed)

Kitchenette (closed)

*flex*Trolley

Single Bed (open)

Double Bed (open)

Kitchenette (open)

*flex*Trolley

Large Closet (closed)

Double Desk (closed)

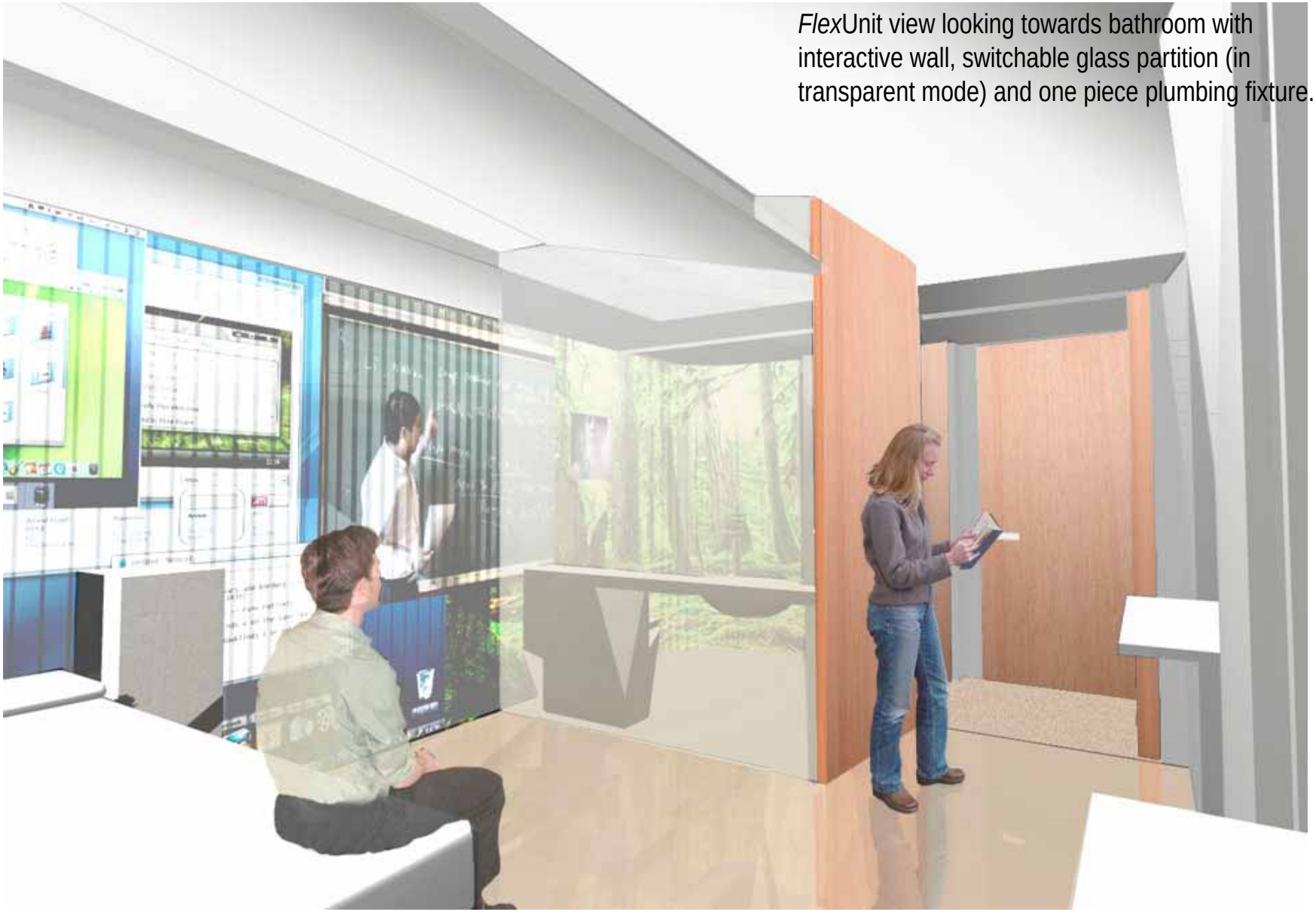
Dining/Conference (closed)

*flex*Trolley

Large Closet (open)

Double Desk (open)

Dining/Conference (open)



*Flex*Unit view looking towards bathroom with interactive wall, switchable glass partition (in transparent mode) and one piece plumbing fixture.

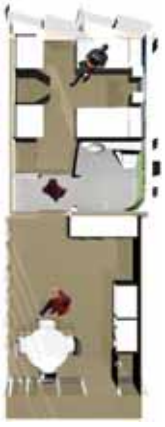
*Flex*Unit view looking through switchable glass partition.

*flex*Suite

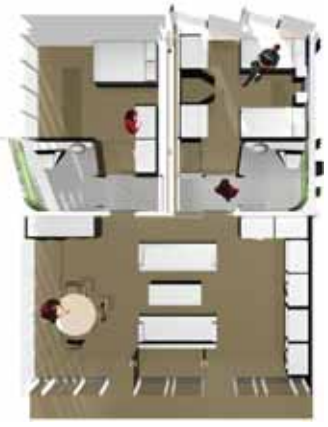
Double

Single with
Full Bed

Studio with
Kitchenette

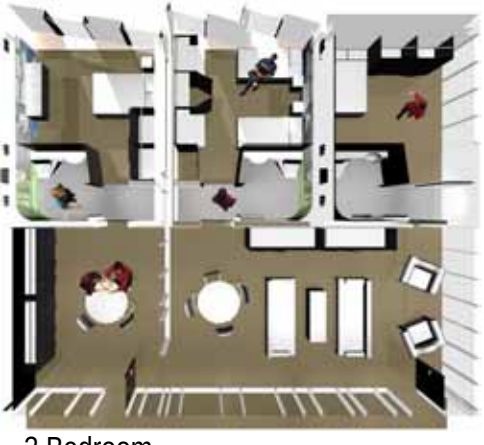


1 Bedroom



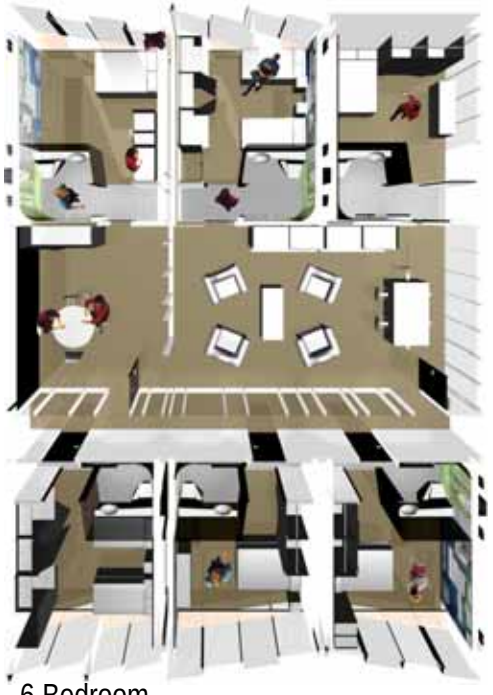
2 Bedroom

Moveable pocket walls and additional door locations allow for multiple configurations of room suites and public lounges. An entire range of unit types can be created depending on year to year student roommate preferences eliminating forced sharing or unintended singles. The kitchenette *flex*Trolley unit can be 'plugged-into' concealed plumbing and electrical outlets at the bathroom wet wall encouraging occupation by graduate students and faculty.

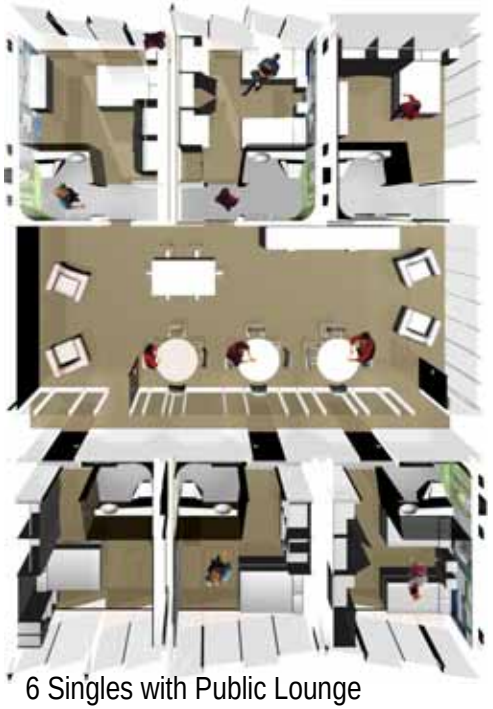


3 Bedroom

4 Bedroom



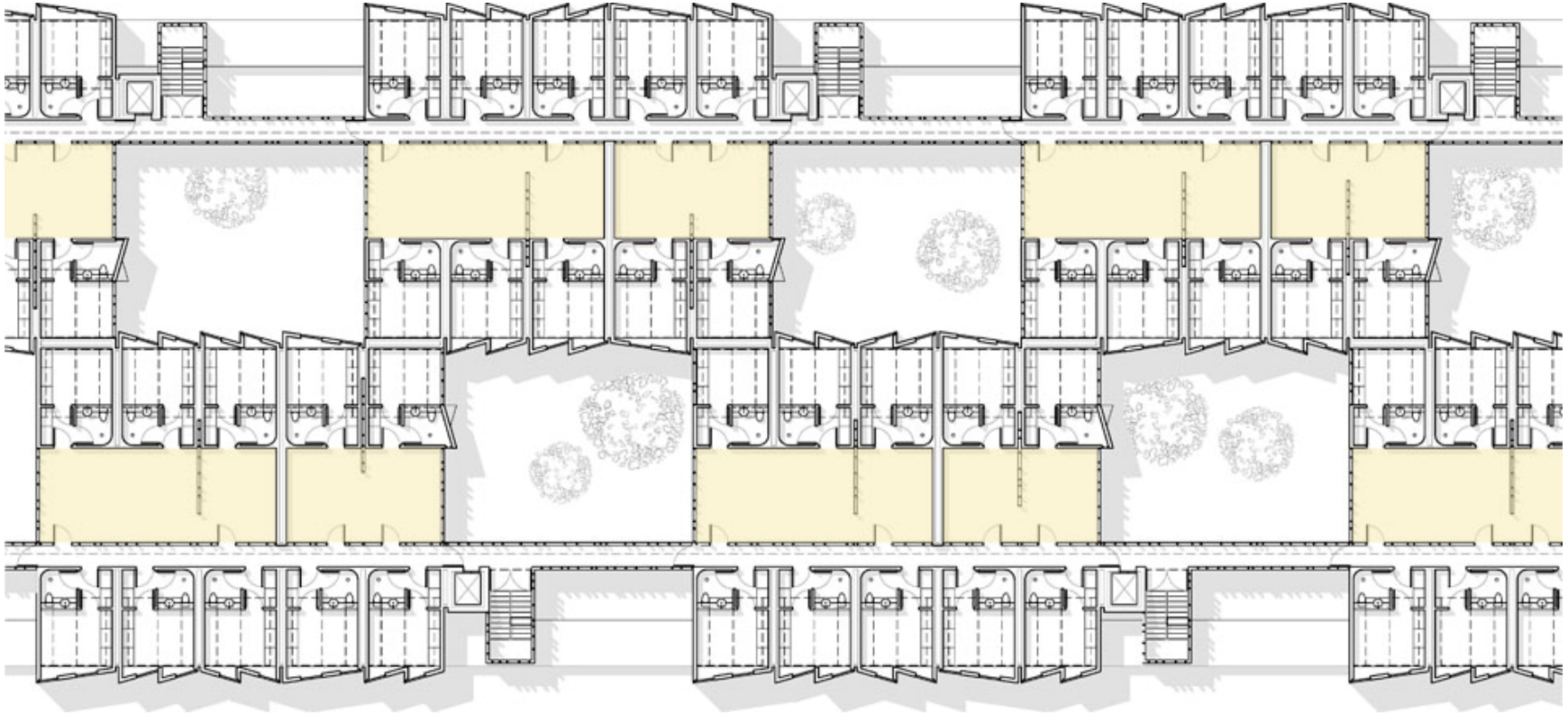
6 Bedroom



6 Singles with Public Lounge
or Teaching Space

Typical Floor Plan

The typical corridor and room relationship geometries combined with moveable partitions, enable the variable programming of shared common zones (shown highlighted) as private living, kitchen, private dining, private conference, public lounge, public dining, group study or recreational space.

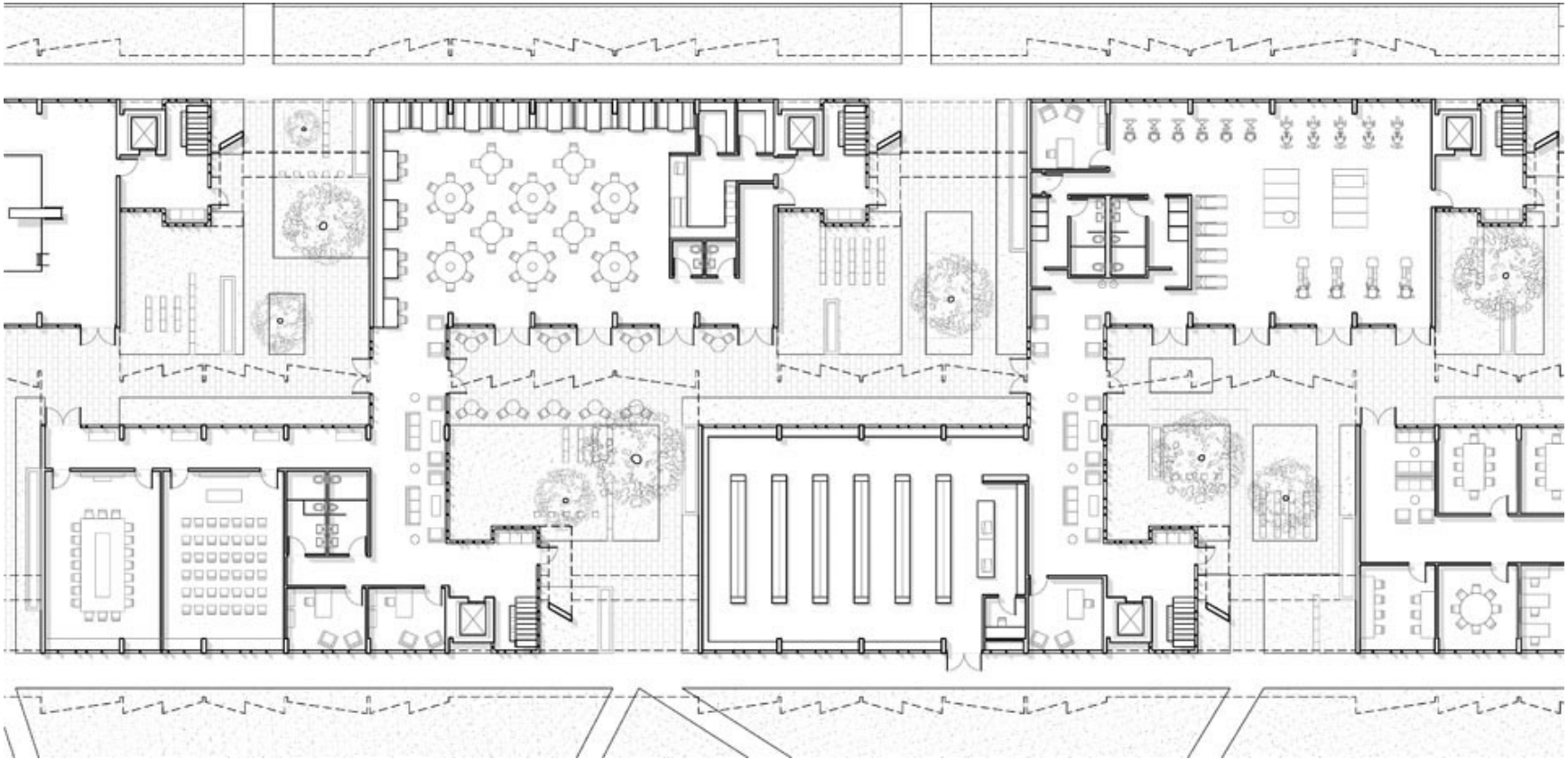


Roof Plan

*Flex*Dorm's green roof is an academic oasis providing a refuge of contemplation for both students and faculty. One and two storey roof top townhouses include private green space in order to encourage the presence of faculty with families. Landscaped outdoor study and recreational roof gardens supplement the ground floor courtyards and provide a setting for scattered library/group study pavilions.

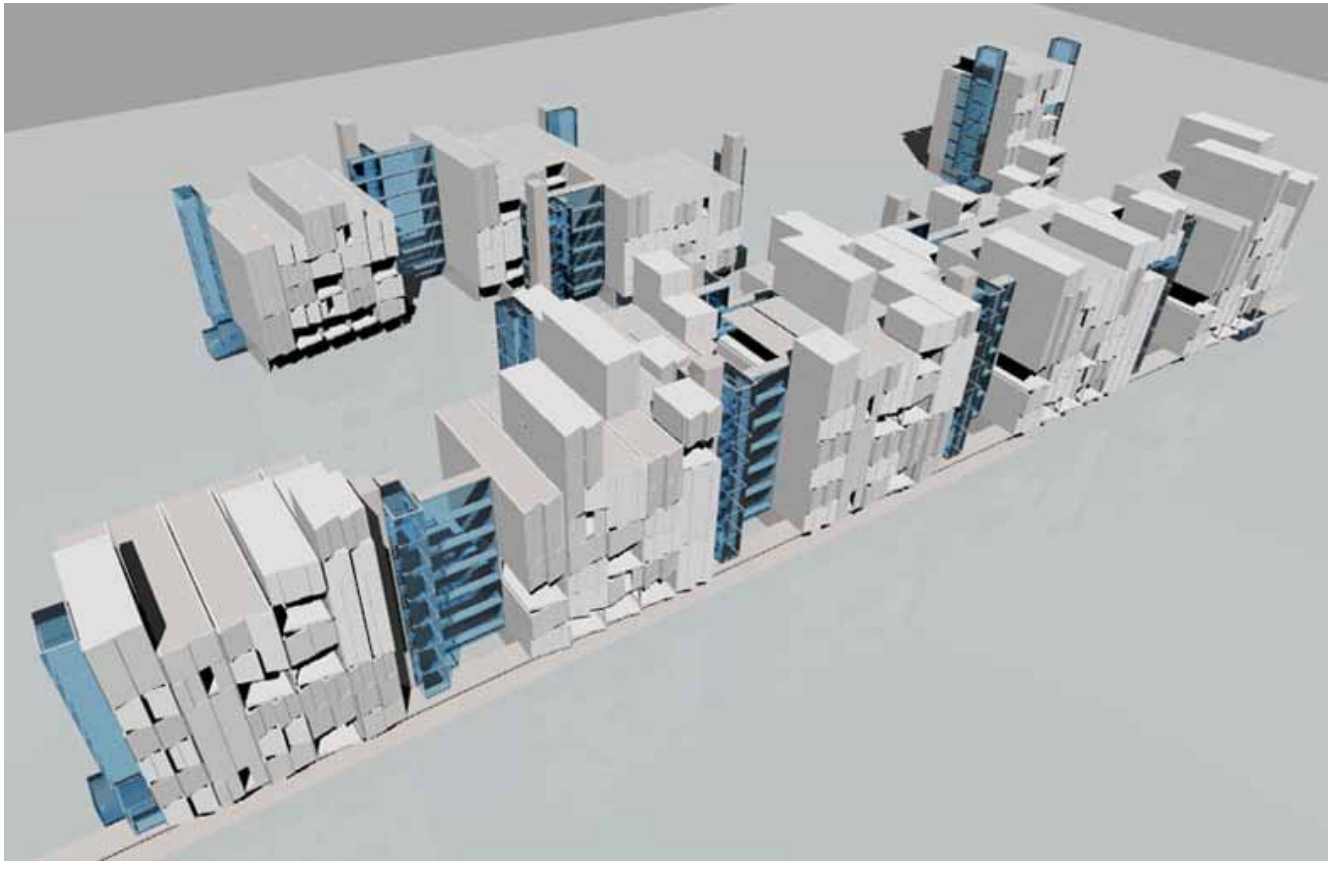
Ground Floor Plan

*Flex*Dorm's open ground floor areas can be developed from year to year to compliment the complexion of the varying unit mixes above and might include, academic instruction space, faculty offices, large media resource study lounges, dining commons, fitness or convenience retail uses. These tenant type spaces have multiple frontages and can be oriented to and entered from the campus connector walkways, courtyards or courtyard breezeways. Intimately scaled academic courtyards invite open air study and informal scholarly discourse, and are interconnected by archways to allow through block circulation.



Unit Aggregation

Residential scaled modular units provide site specific versatility for campus planning.

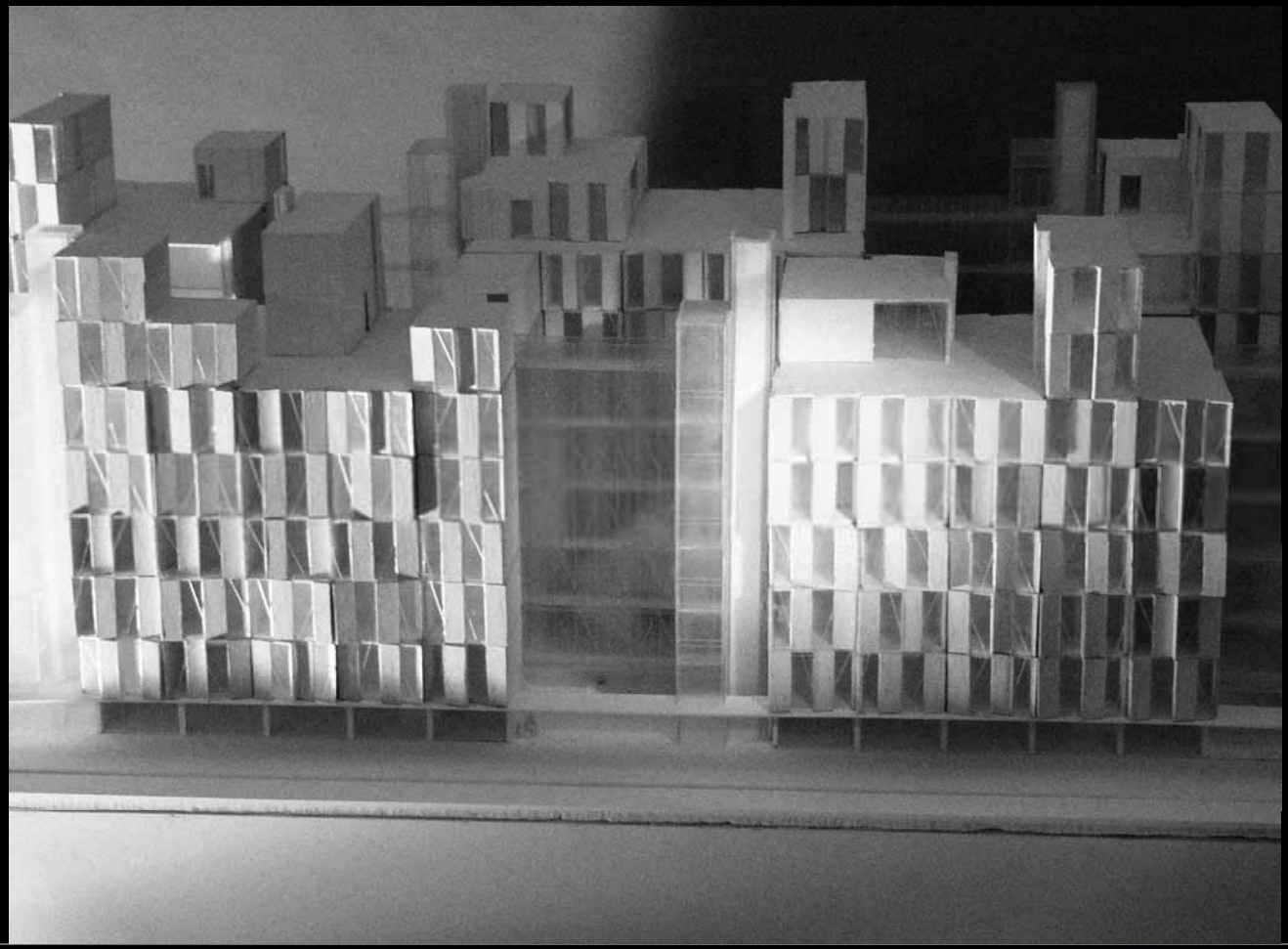


*flex*Campus

*Flex*Dorm's adaptable modular system allows site development appropriate to large campus open space, mid-rise streetscape and neighborhood infill scales as depicted in this hypothetical campus arrangement.

Study Model View

A façade of boldly variegated bays forms a miniature city expressing the pluralism of the student population and the literal diversity of its many residence types. The bays are formed by the end walls of the modular construction units and are modeled to mimic the visual interest and neighborhood feeling of casement sashes in varying open positions. Semi-conditioned, single-glazed corridor bridges connect the unit clusters and create large window walls framing the specimen trees of the academic courtyards beyond.



Study Model View

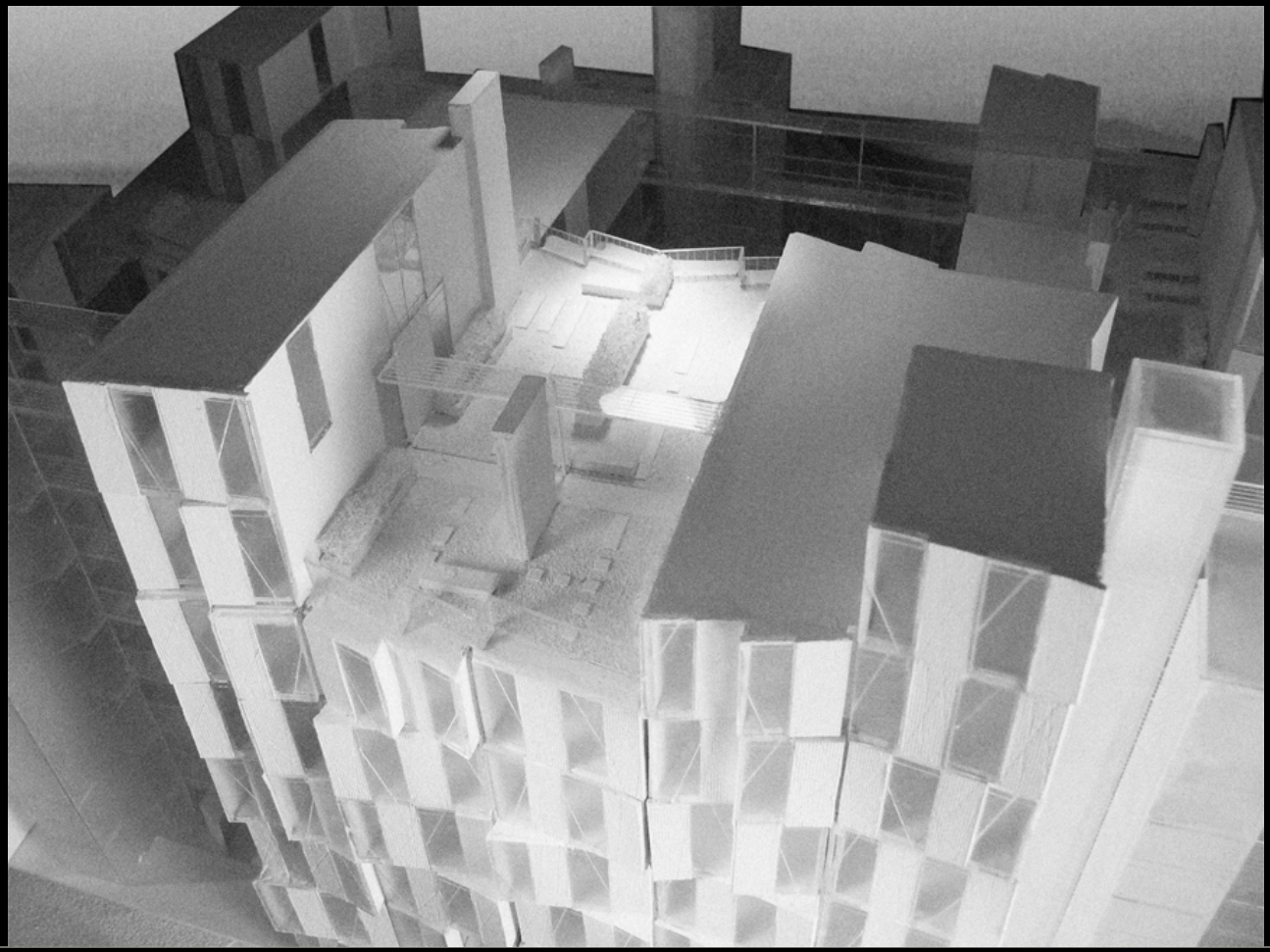
Streetscape

Study Model View

Courtyard entrance with connecting breezeway bridge system

Study Model View

Green roofscape



Conclusion

More than a functional tool for accommodating daily, yearly and generational changes in use - the *flex*Dorm is on the vanguard of changes in the way institutions of tomorrow will conceive of the pursuit, dissemination and conservation of knowledge. In 2006 the walls between disciplines, between classroom and dorm, between students and between faculties are beginning to shift and erode. By 2031 we will live in a fully interdisciplinary world where the virtues of the physical university will be firmly re-established through the products of informal intellectual exchange and spontaneous collaborative interactions. The *flex*Dorm will be a beehive of myriad complex interconnections, unplanned in the details of its configurations but ready to serve the future through its rich variability.

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