

- Preserves, expands and redesigns the existing Pearl's Hill Park
- Creates three new distinct residential neighborhoods
- Places high-density commercial and residential development in a ring around the perimeter of the park

Introduction to Proposal

Pearl's Hill occupies a prominent location in the central city of Singapore. It is one of only two hills in the city center and it is adjacent to the Central Business District, the Chinatown Conservation District, the Singapore Medical Center, the Singapore River and New Bridge Road, a major commercial shopping street. At the corner of New Bridge Road and Outram Road two MRT lines intersect and an expanded MRT Station is under construction. In the future, Upper Cross Street will have a light rail line connecting the project site to

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Team D

The team that preserved the hill and redesigned Pearl's Hill Park

the proposed new Downtown. A new light rail line will create a strong axis along Upper Cross Street from the new downtown terminating at Pearl's Hill Park and the Courthouse across the street.

The Pearl's Hill Park is an oasis within the city of Singapore and is one



North to west Section through Pearl's Hill

of the few places in the city where one gets the sense of being in a tropical forest. Throughout the park, there are pedestrian paths that meander across the slope of the hill amid dense groves of trees, particularly along the northern slope. Other attractive features include a pond garden and two small exercise areas, randomly placed within the park. Although the park does not have a cohesive design, the dense tree cover and the picturesque reservoir provide a quiet respite from the bustling city of Singapore which is a rare "jewel" and should be preserved.

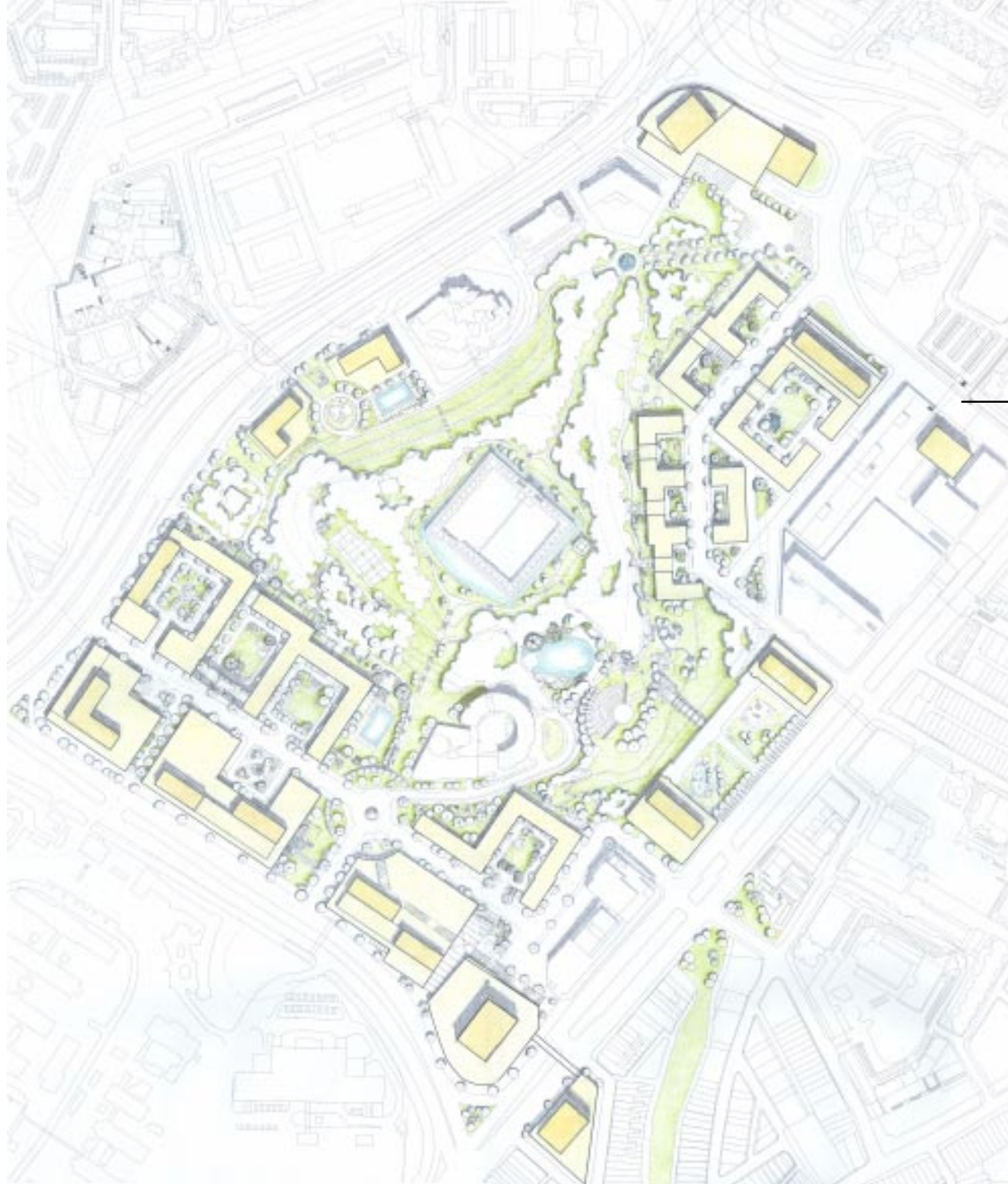
Intent

Team D's urban design scheme reflects the desire to preserve and enhance Pearl's Hill Park as a resource for the citizens of Singapore. Given the current density of Singapore and the future density expected for the island, it is imperative to the urban life of Singaporeans to have easy access to a large green open space within the city center. Besides maintaining habitat for native wildlife and creating a cool green lung for Singapore, Pearl's Hill Park provides an opportunity for active and passive recreation, a place for children to play and allows for improved pedestrian linkages through the city. Team D felt strongly that to build within the park would violate the unique natural environment of Pearl's Hill, and to allow development to encroach upon the

Pedestrian Access to Park



Team D



Site Plan



Model view from south

park would be a substantial loss for the citizens of Singapore.

Team D's urban design scheme is based on the preservation of the park with high-density mixed-use and residential towers along its perimeter. In order to preserve the park and achieve the density required by the URA, proposed development sites have floor area ratios (FAR) of 6.0 or greater. Ideally, the park would be retained and the density requirements eased to a FAR below 6.0 to allow for shorter or fewer towers along the periphery; however, to meet the requirements of the project program, the team pushed the floor area ratios as high as possible without compromising the quality of life within each newly created neighborhood.

This scheme emphasizes the creation of better access to the Pearl's Hill Park from all sides of the study area concentrating on access from Outram Road, New Bridge Road and Upper Cross Street which are important streets within the overall fabric of the city. Team D extended "green fingers" down from the park that reach out to the major streets, thus making the presence of the park more apparent to the public and providing better access to the park itself.



Concept sketch of design proposal

While links to York Hill are important, this team viewed future development on York Hill as independent from their urban design scheme for Pearl's Hill, and, therefore, this project does not include a proposed site plan for York Hill. As part of a future phase of work, Team D envisioned York Hill as a location ripe for high density housing provided that pedestrian linkages to the Singapore River and the Outram Road MRT station are created and maintained. Much of the existing housing on York Hill seems outdated and should be redeveloped in a more cohesive manner similar to that proposed around Pearl's Hill Park, with a stronger focus on creating better pedestrian connections throughout the city.

Along the major roads surrounding the site, Team D has placed high-density slab block housing and mixed-use commercial/ residential towers around Pearl's Hill. On an interior ring around the hill, they provided ten story courtyard-housing blocks that have direct pedestrian connections into the park. They have created three distinct residential neighborhoods that can be developed independently. Each neighborhood has a simple road system that connects to the rest of the city.

Team D envisions the CID site as a mixed-use development with a podium design that contains a Science Museum or some other public use. The towers above provide an ideal location for residential units. (For example, in

New York City, the Museum of Modern Art has a luxury residential tower above the museum and gift shop.) The public nature of the podium as a museum provides an opportunity for public pedestrian paths through the CID site from New Bridge Road, across a bridge and into the park. By retaining the park in front of the CID Building along New Bridge Road, the hard street edge is softened by the park “finger” extending to the street. Moreover, the CID park provides an easily accessible escape from the intense activities along New Bridge Road.

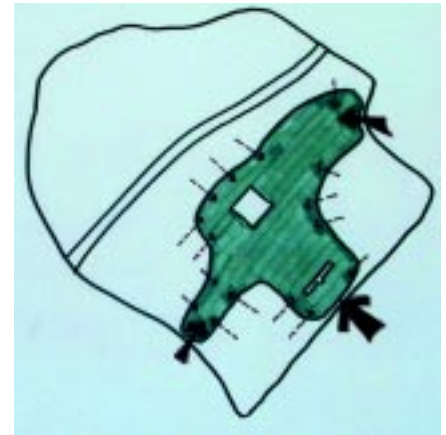
Proposal

This team’s proposal is based on the proposition that Pearl’s Hill Park remain undeveloped. The park itself should be redesigned and enhanced with a better system of pedestrian paths, new playgrounds for children, a more distinguished series of garden elements, seating areas for young and old alike and a new observation tower at the top. The reservoir has been transformed into a water feature that would provide an elegant backdrop for evening activities in the park. The castellated walls of the reservoir should remain when, in the future, the reservoir becomes obsolete and is available for redevelopment. The reservoir structure could serve as a base for a restaurant, a swimming pool or some other public recreational activity that would serve as a magnet for area residents.

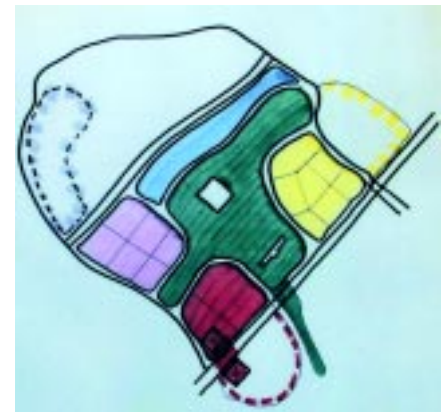
Density and Land Use

Since Team D was committed to the preservation of the hill and the redesign of Pearl’s Hill Park, they did not propose any major development within the park itself. In fact, the team purposely kept the highest density development on the perimeter of the park along the edge of the existing roadways; Outram Road, New Bridge Road, the CTE and Upper Cross Street. They also proposed development on two sites adjacent to the study area that are appropriate for high-density residential development due to their proximity to transit and their availability as underdeveloped sites. One site is located across New Bridge Road from the new MRT station and the other site is located off New Bridge Road on the site of the OG Building.

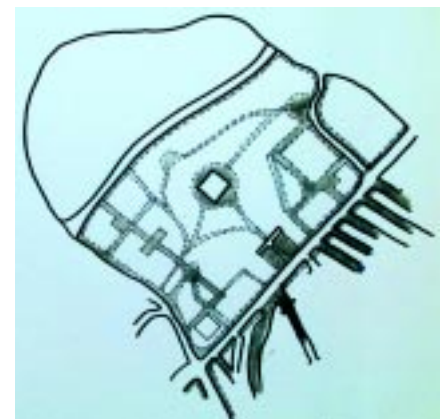
The highest proposed density occurs around the MRT station at Outram Road. Directly above



Pearl's Hill Park access diagram



Parcelization diagram

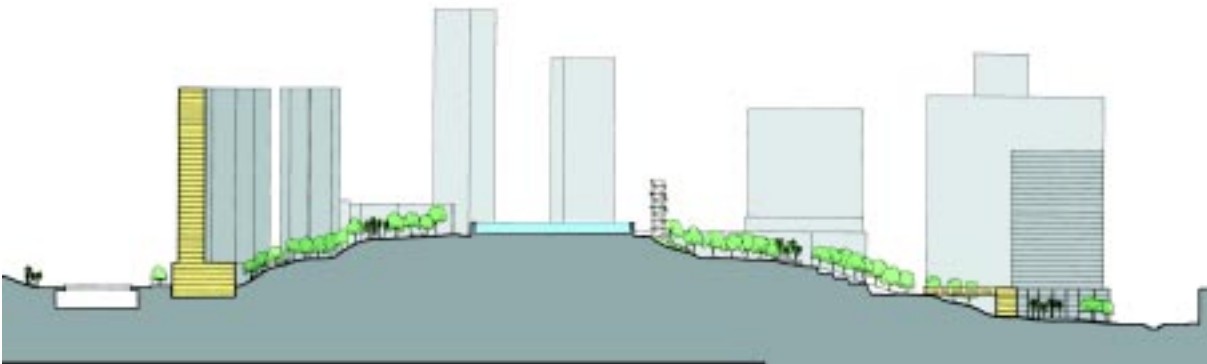


Pedestrian access diagram

the station, the team proposes a podium of commercial space with a large office tower above. Along Outram Road, buildings with commercial podiums are proposed that face the street with residential towers above that are accessed from a new road parallel to Outram Road. The tallest towers have been placed at the corners of site, marking the new and improved Pearl's Hill neighborhood. The towers above the MRT lines that are on either side of New Bridge Road mark the gateway into the neighborhood and establish the intersection as an important urban center within the central city of Singapore.

Implementation

Since the primary theme of this urban design scheme involves preserving the park, the team would first recommend a way to maintain the park. In the United States, there has been the creation of neighborhood groups, like The Friends of the Public Garden in the city of Boston, who raise money and are responsible for the continued maintenance of the park. The creation of such an entity for the redesign and maintenance of the Pearl's Hill Park would ensure that the park continues to be a neighborhood attraction and is



Section through Pearl's Hill

accessible to all the citizens of Singapore.

In terms of development sites, the site above the MRT station is the most critical part of the entire study area and it should be developed first. The MRT site serves as a gateway and a marker for the area and is the place from which most Singaporeans will be entering the area. The Outram Housing site can be parcelized into at least four separate development sites and sold to private developers. The parcels along Outram Road should be developed first and followed by the interior lower density housing.

Next, the CID site is a major part of the urban design for this part of Singapore. While the CID building itself is not architecturally significant, the building has historic significance and could easily be integrated into a design for a museum. The long thin plan of the CID building lends itself to serving as a gallery connecting two more substantial wings flanking the historic building. As a museum, the site would attract both residents and tourists and provide a public amenity for the neighborhood.

The plan for the north side of Pearl's Hill requires the demolition of three architecturally undistinguished buildings: a parking garage and two housing blocks with commercial podiums. Although the housing blocks are not immediately slated for demolition and replacement, the buildings block



Model view from southwest



Initial concept sketch



Pearl's Hill Park edge

off the major entrance to Pearl's Hill Park. By removing the housing blocks and replacing the housing units on adjacent sites, the city would benefit by a new main entrance to the park fronting Upper Cross Street. Upper Cross Street is the new axis leading from the new downtown to the New Bridge Road/ Chinatown District and the light rail line will terminate in front of our proposed park entrance. The Courthouse across the street also fronts the new park entrance and together the park and the courts would create a public activity center.

The proposal includes two new residential towers on the site of the PH Primary School when the school is deemed to be obsolete. The new residential towers would be of the same typology as Landmark Towers on the adjoining site to the north. Each tower could be developed by a different developer if the URA was inclined to divide the site into two parcels.

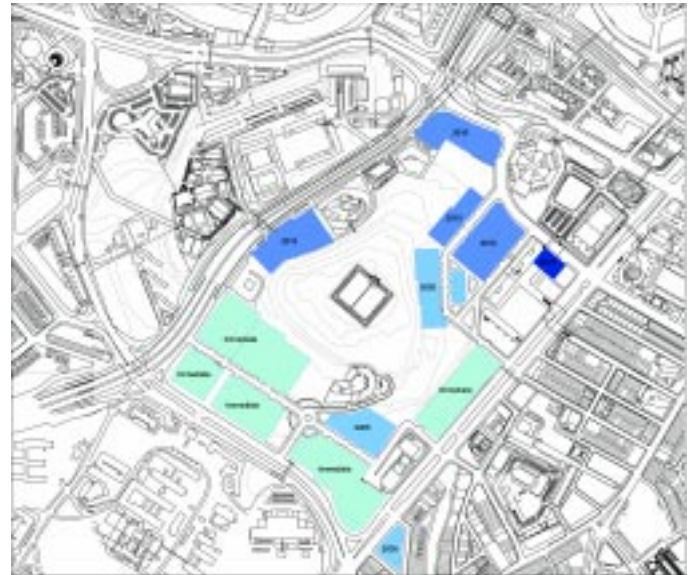
Each neighborhood has parcelization that is flexible. The typical development parcel proposed in this scheme is about one hectare. Parcels could be combined to create larger development sites should the URA want to allow developers control over bigger tracts of land.



Urban transit and open space diagram



Parcel ownership plan



Parcel phasing plan



Open space plan



Parking structure plan



Road network plan

Working independently from the other four student teams, Junfu Zhu created a design proposal for the Outram Housing site. He divided the site into five parts: four separate courtyard communities and a central park. Each residential court is landscaped with trees and water features which then connect to the central park system forming a continuous chain of gardens at an ascending scale. The courtyards are linked to each other through informal, irregular pedestrian pathways, creating an alternative route throughout the site. The site plan resembles the Chinese character Xi which represents happiness and good fortune. All the buildings are designed with good Feng Shui which Junfu Zhu believes would be an added selling point for the developer.

Junfu Zhu

Team E

An exploration of high density residential development

The buildings that face the central park have two-story colonnades that are five meters in depth. These colonnades echo a traditional Singapore architectural style that provides protection from the tropical sun as well as

from the heavy rain during the monsoon season. The residential towers would

contain three different apartment types: a luxury tower apartment, a double-story apartment and a large apartment. The tower buildings are spaced apart to allow light and air to flow into the central park. All of the buildings are arranged to minimize western exposure which is undesirable in the hot humid tropical climate of Singapore.

This proposal creates 3000 new housing units with a floor area ratio of 6.0 for the Outram housing site. The open space covers 55% of the site area. Each residential tower contains parking in the base of the building to easily accommodate the residents of the new neighborhood.



Aerial view of proposal from the west



Site plan iteration 1



Site plan iteration 2



Aerial view from the southwest



Site plan iteration 3

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Chapter 5: Reflections on Studio Proposals

While visiting Singapore, working with our students and discussing ideas with the URA staff, we reflected on a number of ideas about the future of Singapore's city core. These ideas are put forth here to provoke discussion and thought about the design of the city. They have not been tested in a rigorous and functional way, but they do emerge for us as clear implications of the work illustrated earlier in this report.

Singapore's goals for its future, its physical setting and climate, and its remarkable resources all suggest that each increment of change in the city's form, however small, should be carried out in a way that enhances the public realm of the city. The desired attributes of these increments of change need to be anticipated and incorporated in urban design plans for every zone of the city core. Singapore has a clear tradition of consistent plan preparation and implementation in the central city. The current cycle of strategic planning provides an excellent opportunity to examine the implications – and we believe desirable implications – of redeveloping the core areas of the city at double the current density.



Team A Urban Connections

Having studied a future for the Pearl's Hill and York Hill sites at a Floor Area Ratio (FAR) of 5, we are confident that such densities can be properly accommodated on these sites. In order for such densities to be applied more widely throughout the city, individual sites need to be studied in terms of their own special characteristics. These individual studies should then be the basis of an overall plan for the intensification of the central area of Singapore. Such an urban design plan is urgently needed in the light of population growth and land limitation in Singapore. We do believe that there will need to be an explicit shift in emphasis towards the needs of pedestrians in such a plan. Such a plan could also seek to build a clearer pattern of major streets and to create connections between the new core areas on the reclaimed land and the existing foci of development such as Pearl's Hill and the Courts district on the east edge of the project site.

Changes in site intensity will have implications for the street system which connects and articulates major sites throughout the city. The streets of

Singapore have the potential for integrating non-contiguous sites, for creating intense public pathways, for impressive landscaping and climate control, and for consolidating and creating an overall image of the center of Singapore as a vibrant community. Too many isolated and introverted places now dominate Singapore's central city pattern. New Bridge Road/Eu Tong Sen Street along the southern edge of our project site, is an instance of a thoroughfare that offers an immediate opportunity for a comprehensive redesign. A new urban design scheme will enhance the pedestrian experience at the same time ensuring that it affords easy access to elements of the public transportation system. The high-density redevelopment along the western edge of the Pearl's Hill and York Hill sites and the attraction of the new MRT interchange at Outram Road will increase pedestrian movement along Outram Road. There will be an opportunity to redesign the street level environment to be engaging and inviting for pedestrians.

A further implication of the new densities that are proposed for sites in the city center, such as Pearl's Hill and York Hill, is that the road and service vehicle access system will need to be carefully considered. It was clear from the student proposals that residential development at high density calls for a carefully detailed local access system that will allow passenger vehicle access to residential buildings, service vehicle access to loading areas, and safe pedestrian paths within the same right of way as the vehicle traffic. These street designs will need a new emphasis on the priority of pedestrian comfort, convenience and safety if higher densities are to be adopted. The rights-of-way will have to be carefully designed so as not to squander space by incorporating unnecessary right-of-way and lane width, or excessive building setbacks.

At densities such as those projected in this study, the amount of space devoted to automobiles on the site, especially with the presence of severe slopes, needs careful attention. When one parking space is required per dwelling unit, a large volume of adjacent parking is necessary for a residential tower. Required on-site parking uses a substantial portion of any development site. If, in addition to the provision of a major park to serve city residents, local open space is to be provided for site residents, then on-site parking has to be primarily underground. This, in turn, significantly raises the cost of the development particularly since land prices in Singapore have risen to a point where land purchasing expenses compose about two-thirds of the development's total cost.

Since Singapore is moving to an 80/20 modal split and cars are mainly used for social trips, the possibility of warehousing parking was investigated by a few of the student teams. In some instances, parking structures located at the periphery of the site or within commercial buildings allows the removal of parking from residential parcels. These parking sites were either within a comfortable walking distance, or were serviced by a shuttle system. In other instances, the parking structures themselves were designed to minimize space. Since cars are accessed infrequently, space saving devices such as stacked parking can be utilized. By concentrating parking and warehousing at least part of the required parking spaces, many of the difficulties associated with the high residential density and the steep topography of the site will be mitigated.

The students' work illustrated a number of options for taking advantage of the 'air-rights' over streets and expressways passing through or adja-



Team B pedestrian park

Team C parking configuration



cent to the site. There are at least two good reasons to investigate air-rights development on this site and more widely throughout the city core where topography and the cross-section of adjoining development may readily accommodate it. The first reason is the opportunity to recover usable land at the same time as providing for vehicle access on major roads. The proposed density of a FAR of 5 to 6 for sites in the central city begins to allow for financially viable air-rights development. The second reason is to make the pedestrian setting more attractive by removing the noise and visual impact of high volumes of traffic. Given Singapore's need to use its land more intensively, building housing or other types of development over roadways will better utilize the scarce land resource.



Team D hilltop access

Pearl's Hill is not readily seen and revealed as a special resource or natural feature within the city's landscape. Over the long term, every effort should be made to encourage unrestricted public access to the top of Pearl's Hill, perhaps adding a tower structure that would allow for both its identification from elsewhere in the city and its use as a public viewing point. The site's severe topography and the proposed high-density buildout will leave little of the original land and native vegetative cover. Thus, the reshaping of the new landscape should be seen as an opportunity to create a new vocabulary of integration between open, semi-open and built spaces. The landscape can be seen as a respite from the bustle of the surrounding streets and intense commercial development by providing internal, semi-secluded gardens in some areas and in other areas providing opportunities to traverse the site to get to other parts of the city such as the river.

The benefits of extensive landscaping on the site can not be overlooked. The careful structuring of vegetation and open spaces can support the functioning of natural systems. A combination of connected 'patches' and 'corridors' throughout the city provides habitat for wildlife, enhances bio-mass flow, and allows better control of storm-water runoff.

Beyond the environmental, recreational, and aesthetic benefits of an extensive landscape design, plant material and landscape features should be seen as the binding theme between the different land uses on the Pearl's Hill/York Hill site. The severe topography provides a unique opportunity to incorporate easily accessible roof gardens and terraces, which in turn creates a dynamic relationship between private, semi-private and private open spaces. Creating connections between these different spaces through stairs, ramps, and landings increases the utility of the site while maintaining the memory of the original hill. Better connectivity also creates a zone where public and semi-private realms overlap, creating defined physical edges, yet allowing visual continuity between spaces.

As Singapore continues to intensify the use of its downtown core both by rebuilding on key sites such as Pearl's Hill and by expanding onto newly reclaimed lands at its southern edge, the government has the opportunity to create one of the world's most engaging and successful new city centers. To meet this challenge, Singapore must subject every part of the core area to new design efforts that will take into account these aspirations and will bring a fresh appraisal – and reconsideration – of previous expectations about the form to be given to buildings, landscaping and circulation paths. We feel privileged to have had the chance to be part of Singapore's planning process and look forward with interest to the outcome of the next round of thinking about city design and development in Singapore.

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