

APPENDIX

**Report on Determination of
Appropriate Rental Values for
Derivation of Benchmark Cost of
Chilled Water Production**

**PREPARED FOR ENERGY MARKET AUTHORITY
BY KNIGHT FRANK PTE LTD**

22 NOVEMBER 2006

<u>CONTENT</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 OBJECTIVE OF THIS REPORT.....	2
3.0 ECONOMIC VALUE OF SPACE SAVING.....	3-11
3.1 Terminology and Factors Affecting Net Effective Rentals.	4
3.1.1 Rental.....	4
3.1.2 Service Charge.....	5
3.1.3 Subsidies.....	6
3.1.4 Fitting-Out Periods & Rent-free Periods	8
3.1.5 Property Tax	9
3.1.6 Occupancy Rate	11
4.0 DERIVATION OF NET EFFECTIVE RENT.....	12-17
4.1 Assumptions.....	12
4.2 Net Effective Rent of Office and Retail Space.....	13
4.3 Net Effective Rent of Non-Owner-Operated Hotel Space.....	14
4.4 Net Effective Rent of Owner-Operated Hotel Space	15
4.5 Source of Information.....	16
5.0 MODERATION OF NET EFFECTIVE RENTAL COMMITTED AT THE TROUGH OF PROPERTY CYCLE.....	18-25
5.1 Property Cycle of Each Sector.....	19
5.2 Adjustment Factors for Gross Rentals & Annual Values.....	20
5.3 Adjustment Factor for Subsidies.....	22
5.4 Adjustment Factor for Rent-Free Periods (in the lease term).....	23
5.5 Adjustment Factor For Occupancy Rates.....	23
6.0 NO DOUBLE ACCOUNTING OF COST COMPONENT.....	26
7.0 RATIONAL FOR SELECTION OF BUILDING SAMPLE.....	26

ANNEX 1: PROPERTY RENTAL MARKET CONDITIONS IN 2003

ANNEX 2: RENTAL INDICES FOR COMMERCIAL SPACES IN CENTRAL REGION

ANNEX 3: OCCUPANCY RATES OF COMMERCIAL SPACES IN CENTRAL REGION

SUMMARY

A pilot district cooling system (DCS) has been constructed to supply chilled water to meet the air-conditioning needs of the commercial buildings within the pilot district cooling service areas (DC Zone) in Marina South. The price of district cooling service charged by the DCS operator for the supply of chilled water will be regulated by the Energy Market Authority (EMA) and it will not be more than the benchmark cost of chilled water produced by conventional air-conditioning systems (Benchmark Cost) established by the EMA.

As the commercial buildings in the DC Zone would be designed to receive chilled water supply, they would not need to install their own in-house chiller plants. The space saved from the absence of in-house chiller plants (including the associated equipment) could in turn be used as lettable space to generate additional rental income. Hence, one component of the Benchmark Cost is the economic value of the space saved that could be accrued to the building owners.

The Benchmark Cost was established by the EMA based on 2003 prices and it comprises a fixed cost component and a variable cost component. The fixed cost component is inflation adjusted annually using CPI, while the variable cost component is adjusted annually using electricity and water indices.

The economic value of space saved included in the fixed cost component was derived based on gross rental values in the initial Benchmark Cost established by EMA in 2003. EMA has, after having received feedback from the industry, decided that it instead is more appropriate to derive the economic value of space saved based on net-effective rental value of the space saved (i.e. net benefit) that could be accrued to the building owners.

Knight Frank Pte Ltd (Knight Frank) has been engaged by the EMA to review and provide the net effective rental value (economic value) of space saved arising from the use of DC service. The net effective rental value will be used to adjust the Benchmark Cost established by EMA in 2003.

To compute the net effective rental value of the space saved, Knight Frank will use the 2003 rental and leasing information from the 10 sample commercial buildings that were surveyed for the establishment of the Benchmark Cost in 2003.

In computing the net effective rental value, Knight Frank will ensure that there is no double accounting of cost components in the Benchmark Cost. In addition, Knight Frank will comment on whether the 10 sample buildings that were surveyed for the establishment of the Benchmark Cost are representative of the buildings to be developed in the DC Zone.

This report describes the approach Knight Frank will take to derive the net effective rental.

1.0 INTRODUCTION

A pilot district cooling system (DCS) has been constructed to supply chilled water to meet the air-conditioning needs of the commercial buildings within the pilot district cooling service areas (DC Zone) in Marina South. Commercial buildings within the DC zone will be required to use the district cooling service and the price of district cooling service charged by the DCS operator for the supply of chilled water will be regulated by the Energy Market Authority (EMA) and it will not be more than the benchmark cost of chilled water produced by conventional air-conditioning system (Benchmark Cost) established by the EMA.

The 2003 Benchmark Cost was established by the EMA based on 2003 prices and it was derived based on the economic cost of chilled water produced by a conventional air-conditioning system. Under the price control formula, the fixed cost component of the Benchmark Cost will be inflation adjusted annually using the consumer price index (CPI).

One of the components of the Benchmark Cost is the economic value of space used for housing the chiller plant equipment (including the associated equipment) of the conventional air-conditioning system. Buildings designed to receive the DC service would not need to have their own in-house chiller plant room to house the chiller plant equipment, and the building owners can then allocate such space saving to other productive uses. Such space saving has an economic value. EMA has received feedback on the economic value of space saved included in the Benchmark Cost and has decided that it should be derived based on net effective rental values of the space saved instead of gross rental values.

Knight Frank Pte Ltd (Knight Frank) has been engaged by the EMA to review and provide the net effective rental value (economic value) of space saved arising from the use of DC service. The net effective rental value will be used to adjust the Benchmark Cost established by EMA in 2003.

To compute the net effective rental value of the space saved, Knight Frank will use the 2003 rental and leasing information from the 10 sample commercial buildings that were surveyed for the establishment of the Benchmark Cost.

2.0 OBJECTIVE OF THIS REPORT

The objective of this report is to describe the approach for deriving the net effective rental values of space saved arising from the use of DC service.

3.0 ECONOMIC VALUE OF SPACE SAVING

To obtain a return on the capital investment in the acquisition or construction of a building, owners of commercial properties and hotels have to lease out their buildings in exchange for rental incomes. The rental charged should generally cover:

- a) Part of the capital cost;
- b) A required return on the Investment; and
- c) Expenses incurred during the leasing period.

In the case of commercial properties (i.e. office and retail space), landlords would try to recover these costs from the tenants in the form of rent. The more space that they can lease, the more rental income they can expect to receive. The rentals would comprise a base rent and expenses incurred to keep the building in operation for the tenants. Often, depending on the market conditions, length of the lease, size of space to be leased, characteristics of the space and gross rental paid, discounts and subsidies also are provided to tenants in the negotiation process to entice tenants to lease the space in the building. Hence, these expenses, discounts and subsidies need to be deducted from the rental income received by the landlord to reflect the actual bottom-line of the landlord.

In the case of hotels where the building owner and the hotel operator are the same entity, costs of investment are recovered from room rentals receipts, food and beverage (F&B) sales and receipts from the provision of ancillary services. Hence, any increase in lettable space that is sufficient to create a hotel room can potentially raise the room receipts and F&B sales of the owner.

3.1 Terminology and Factors Affecting Net Effective Rentals

3.1.1 Rental

In the case of commercial buildings, signing rents between the landlord and tenants are normally quoted on a “gross rent” basis that is payable monthly or quarterly in advance.

Gross Rent = Base Rent + Service Charge

The gross rent does not totally accrue to the landlord’s benefit because the landlord incurs operating expenses to keep the building functional. These expenses, generally known as service charges, eat into the earnings of the landlords and thus have to be deducted to reflect the fair base rental that the landlords receive.

In addition, depending on the market conditions, length of the lease, size of space to be leased and characteristics of the space and gross rental paid, landlords may provide rent-free periods and subsidies to attract tenants to take-up the space. These marketing collaterals again reduce the landlord’s rental revenue. Likewise, the landlord’s bottom-line is affected by the overall occupancy rate of the building and the property tax payable annually. Hence, these factors have to be taken into account to obtain the net effective rental income that the landlord finally receives.

Net Effective Rent = Base Rent less: Fitting-out Period

Rent-free Period

All Subsidies & Other Benefits

Property Tax

Vacancy

In the case of hotels, receipts of building owners usually comprise two main components: room rentals and F&B sales. General expenses for hotel operation includes administrative costs for rendering services, maintenance costs, cost of sales and other unclassifiable expenses.

3.1.2 Service Charge

Service charge is an amount to be paid by the tenant to the landlord for providing specified services to the premises and is a component in the gross rental. The charge varies between buildings and types of use. It generally covers:

- Charges for common services (e.g. lifts, escalators, air-conditioning system, building automation system, emergency generators, common toilets, security, etc);
- Maintenance cost for the exterior and common areas (e.g. cleaning, pest control, etc);
- Reserve contribution for repairs and upgrading of plant and building
- Insurance for public and fire risk;
- Agency costs and management fees (e.g. tenancy administration, finance, legal services, marketing and promotion costs);
- Hotel operating costs (for hotel developments); and
- Other maintenance and operating costs.

Most leases have provisions to allow the adjustment of service charges at any time during the lease term if the cost of providing the specified services to the building changes.

For office space, the service charge ranges between S\$0.80 and S\$1.30 per sq ft per month while for retail space, service charges are typically higher, in the range of S\$1.00 to S\$1.50, due to longer operating hours and higher usage.

As landlords are responsible for the general operations and maintenances of the building, they have to incur expenses of repair, insurance, maintenance or upkeep and all taxes (other than goods and services tax). Hence, it is a common practice for landlords to pass on these costs to the tenants, who are users of the services, in the form of service charges.

3.1.3 Subsidies

Subsidies refer to the financial incentives granted by the landlord to attract the tenant rent a space in his building. Landlords often use subsidies as marketing tools to equip themselves with a competitive edge against other market players. The amount and nature of subsidies depend on market conditions, length of the lease, size of space to be leased, signing rents and characteristics of the space.

Subsidies that are typically provided by commercial landlords are:

a) Fitting-out Subsidy

Tenants often rent an unfurnished unit from the landlord. As such, they are responsible for all cost incurred in the fitting-out of their office unit such as installation of blinds, carpets, furniture, partitions, wall coverings and any other alternations to existing mechanical and electrical system, telecommunication systems and fire protection systems. These costs can range from \$50 to \$70 psf for economy specifications to \$80 to \$100 psf for mid to high range scale.

Contributions by landlords to tenants for their fitting-out would result in a lower effective rent over the period of the lease.

b) Utility Subsidy

Tenants are usually required to make arrangements with the relevant power and telephone service providers to install a separate meter for utilities consumption and to lay telecommunication lines within the premises. They will pay the connection charges and all subsequent charges for electrical and water utilities and telecommunication services to the premises directly to the relevant service providers.

Utilities subsidies are unusual and if provided by landlords may come in the form of a lump sum cash rebate or a direct reimbursement to the utilities bills of the tenant.

c) Car Park Subsidy

The number of car park lots allocated to each tenant is usually based on their total space leased. Car park charges are usually not included in the gross rental but collected as a monthly season fee. Car park subsidies may be offered to tenants in the form of providing free season parking for 1 or 2 lots every month.

These subsidies, if provided, would result in a lower effective rental received by the landlord over the lease period.

3.1.4 Fitting-Out Period & Rent-free Period

a) Fitting-out Period

Tenants of commercial buildings are usually given a reasonable period to fit-out the premises before the commencement of the lease term as time is needed to finalize designs, obtain necessary approvals and carry out renovation works. This period is commonly known as “fitting-out period” and is given by the landlord to the tenant outside the lease term or duration of the lease before the commencement of the lease and it will result in an increase in the number of months that the landlord has allowed the tenants to use the space.

Typically, the time taken for fitting-out works depends mainly on the amount of space leased¹. A general example is shown below.

- | | |
|---|---------------|
| ▪ Up to 1,000 sq ft (93 sq m) | 2 - 4 weeks |
| ▪ 2,000 to 5,000 sq ft (186 to 465 sq m) | 6 - 8 weeks |
| ▪ 6,000 to 10,000 sq ft (557 to 929 sq m) | 10 - 12 weeks |

¹ Fitting-out Period for retail tenants are often more stringent. Landlords may sometimes specify that the space is rent-free until the fitting-out period or the commencement of business, whichever is earlier.

b) Rent-Free Period

The office landlord may give the tenant additional rent-free period inside the lease term depending various factors such as the prevailing market conditions, occupancy rate of the building, gross rental payable and the length of lease. These additional rent-free periods provided within the duration of the lease terms is meant as incentives for the tenants, allowing them to occupy the space without paying rents for certain months within the lease term. However, these rent-free periods provided in the lease terms will reduce the effective rental received by landlords for the whole lease period.

For retail space, rent-free period in the lease term beyond the fitting-out period is rare.

For hotel properties, fitting-out period and rent-free period are not applicable.

3.1.5 Property Tax

Property Tax is a tax on immovable properties (i.e. land and buildings), which is to be borne by the owner. Under the Property Tax Act, the person for the time being receiving rent of any premises whether on his account or as a representative of the legal owner is deemed to be the 'owner'.

For commercial properties, the tax payable is calculated based on a percentage (Tax Rate) of the Annual Value. According to section 2 of the Property Tax Act, annual value of a house or building or land or tenement refers to “the gross amount at which the same can reasonably be expected to be let from year to year, the landlord paying the expenses of repair, insurance, maintenance or upkeep and all taxes (other than goods and services tax). The Chief Assessor will determine the Annual Value of the property by analysing rents of comparable buildings and relevant data. The Annual Value is determined in the same manner regardless of whether the property is let, owner-occupied or vacant.

For hotel properties, property tax is also calculated based on a percentage (Tax Rate) of the Annual Value. However, the annual value of hotel properties are calculated based on 15% of gross receipts on room sales and 5% of gross receipts from food and beverage sales.

Any increase in lettable area can potentially raised the amount of rental income received by the landlord. Hence, property tax is chargeable for any extra space leased. As property tax is payable by the landlord and this study aims to assess the economic value of the space saved from the perspective of the landlord, property tax chargeable from the space saved has to be deducted from the rental income so that the landlord will not be unduly penalized for the extra spaced leased arising from the use of the DCS.

3.1.6 Occupancy Rate

Occupancy Rate measures the percentage of space that are occupied or rented at a given time.

$$\text{Occupancy Rate} = (\text{Amount of Space Let} / \text{Total Lettable Space}) \times 100\%$$

Occupancy rate reflects the demand for the space over time. However, demand for the space changes over time in accordance to the economic and property market cycles. Hence, landlords with more lettable space are not always guaranteed more rental income over time.

A development with nearly full occupancy rates implies that the landlords can expect to realize almost full potential of the space at a given time while one with low occupancy rates indicates that there would be periods of time where the landlords will not be able to receive the expected rental income. Hence, the effective rental received by landlords over time would be lower in buildings with low occupancy rates as compared to one with a high occupancy rate.

4.0 DERIVATION OF NET EFFECTIVE RENT

4.1 Assumptions

The following assumptions will be used to derive the net effective rental accruing to landlords arising from the savings in building space with the use of the DC service in the DC zone:

- a) The freed-up space of the chiller plant room will be fully lettable. In other words, the GFA (Gross Floor Area) of the freed-up space is the same as the NLA (Net Lettable Area). This is because there is circulation area (e.g. corridor space) leading to the chiller plant room. The removal of the chiller plant room could also free up such circulation area. As the freed-up circulation area would contribute to the total circulation area, there is no need to deduct additional circulation area from the chiller plant room space. Hence the chiller plant room space could be fully used as lettable space.
- b) Landlords grant tenant an option to renew the lease at a rent based on the prevailing market rent at the time of renewal.

4.2 Net Effective Rent of Office and Retail Space

The formula for the derivation of the net effective rent accruing to commercial building owners, taking into account relevant factors, is as shown in Equation 1 below :

Equation 1

$$\text{Net Effective Rent (\$/sf pm)} = \left\{ \left[\frac{\text{Gross Rent} - \text{Service Charges} - \text{Subsidies}}{\text{Lease Term} + \text{Net Fitting-out Period}} \times \left(\frac{\text{Lease Term} - \text{Rent-Free Period}}{\text{Lease Term} + \text{Net Fitting-out Period}} \right) \times \text{Occupancy Rate} \right] - \text{Property Tax} \right\}$$

Where :

Net Fitting-out Period = Fitting-out Period² - Actual Time Spend on Fitting-out works

“Rent-free period” is given by the landlord to the tenant inside the lease term and it reduces the number of months in the lease term that the landlord can collect the rental.

² Fitting-out period is given by the landlord to the tenant outside the lease term or duration of the lease before the commencement of the lease and it serves to increase the number of months that the landlord has allowed the tenants to use the space.

4.3 Net Effective Rent of Non-Owner-Operated Hotel Space

Non-owner-operated hotel space is leased out by building owners in a similar mode as office and retail space. However, such hotel space is leased to hotel operators on a much longer lease term as compared to the general office and retail space because hotel operators incur a higher fitting-out cost and would require a longer pay-back period.

Given that the gross rental of the subject non-owner-operated hotel space in this report includes a step-up minimum rent structure, a service charge component and a variable rent component based on a percentage of gross operating revenue earned from the space leased, the formula for the computation of the net effective rent accruing to the owner of the non-owner-operated hotel space is as shown in Equation 2 below :

Equation 2

Net Effective Rent (\$psf pm)

= (Gross Rent – Service Charges) – Property Tax

No subsidies, fitting-out period or rent-free period are deducted as these factors are not provided by the owner of the subject building. Also, as the hotel operator has committed to occupy the space for a long lease period, the building owner will not experience any short-term fluctuations in the occupancy rate of the space.

4.4 Net Effective Rent of Owner-Operated Hotel Space

Derivation of the net effective rent of owner-operated hotel space is based on the annual value of the hotel. Annual value for hotel properties is calculated based on the actual gross room receipts and F&B sales of the hotel annually. Hence, occupancy rate of the hotel space is already taken into account in the computation of annual value. In the case of owner-operated hotels, as the space saving from the chiller equipment room arising from the use of the DCS could be used to increase the number of hotel rooms or F&B space, this could contribute to an increase in the room receipts and the F&B sales of the hotel. As a result, the annual value of the hotel would increase. Since the annual value of the hotel reflects the change in economic benefit from the space saving, it is used to calculate the return of the space saving.

The formula for the computation of the net effective rent accruing to hotel owners is as shown in Equation 3 below :

Equation 3

$$\begin{aligned} &\text{Net Effective Rent (\$/psf pm)} \\ &= \left[\frac{\text{Annual Value}}{12} \right] / \text{NFA of Hotel} - \text{Property Tax} \end{aligned}$$

Where : NFA is the net floor area

4.5 Source of Information

For the derivation of the net effective rental value (economic value) of space saving that could be accrued to the building owners, we would require the data items given in Table 4.1.

The source of information and data used in this study will be based on the actual transacted rentals and leasing information committed in 2003 and provided by landlords of the 10 sample buildings, Knight Frank Research’s database and URA’s statistics.

In the case where the building owners are not able to provide us with the necessary information, we will use appraised rental values for that particular building. The appraised rental will be based on our research findings and on the characteristics of the subject building given in Table 4.2.

Table 4.1: Data for the Derivation of Net Effective Rental

	Office and Retail Space		Non-Owner-Operated Hotel Space		Owner-Operated Hotel Space
1	Gross Rents, Low (\$psf pm)	1	Gross Rents, Low (\$psf pm)	1	Annual Value ⁽⁶⁾
2	Gross Rents, High (\$psf pm)	2	Gross Rents, High (\$psf pm)	2	NFA of the Hotel (sq ft)
3	Service Charge ⁽¹⁾ , (\$psf pm)	3	Service Charge ⁽¹⁾ , (\$psf pm)	3	Property Tax ⁽⁵⁾ , (\$ psf pm)
4	Subsidies ⁽²⁾ (\$psf pm)	4	NFA of the Hotel (sq ft)		
5	Fitting-out Period ⁽³⁾ (mths)	5	Property Tax ⁽⁵⁾ , Low (\$ psf pm)		
6	Rent-Free Period ⁽⁴⁾ , Low (mths)	6	Property Tax ⁽⁵⁾ , High (\$ psf pm)		
7	Rent-Free Period ⁽⁴⁾ , High (mths)				
8	Occupancy Rate (%)				
9	Property Tax ⁽⁵⁾ , Low (\$ psf pm)				
10	Property Tax ⁽⁵⁾ , High (\$ psf pm)				

Notes:

- (1) Service Charges cover the cost of services, repair, maintenance, insurance and agency costs.
- (2) Subsidies refer to the financial assistance granted by a landlord to a tenant. It may include fitting-out subsidies, utility subsidies, car park benefits and other financial benefits given at the discretion of the landlord.
- (3) Fitting-Out Period is usually provided outside the duration of the lease. Fitting-out Period is assumed to be the Actual Renovation Period Used by Tenant.
- (4) Rent-Free Period refers to the rent-free period given by landlords as incentives at the start of the duration of the lease. Typical Lease Term is 3yrs (i.e. 36 months).
- (5) Property Tax Payable is 10% of Net Effective Rent Before Property Tax.
- (6) Annual Value in 2004 is taken to represent the Net Revenue of the Hotel in 2003.

Table 4.2 Intrinsic Factors Affecting Rental Value of Office Space

External Environment	Internal Environment
<ul style="list-style-type: none"> - Accessibility - Availability of Amenities - Location - Visibility - External design & appearance 	<ul style="list-style-type: none"> - Age & Upkeep of Building - Cable Management - Column-free space - Existing Profiles of Tenants - Furnishing & Fittings - Building height - Lobby frontage - Shape and Layout - Size of Floor Plates - Windowed-space - Age, condition, speed of lift - Security

5.0 MODERATION OF NET EFFECTIVE RENTAL COMMITTED AT THE TROUGH OF PROPERTY CYCLE

Under the price regulation formula, the fixed cost component of the established Benchmark Cost (\$ per unit capacity) will be inflation adjusted using CPI (Consumer Price Index) on an annual basis.

As the base year of the Benchmark Cost is 2003, its economic value of space saving will consequently be derived using 2003 rental values.

There is a concern that basing the economic value of space saving on rental committed in 2003 may result in a depressed Benchmark Cost as the rental market is at or near the trough in 2003. A brief description of the rental market condition in 2003 is given in Annex 1.

To address this concern, it is proposed that the 2003 net effective rental values be adjusted to a 'balanced' level, i.e. the average of the net effective rental values in a complete property cycle³ which includes year 2003. Based on Equation 1, 2 and 3, the relevant factors to be adjusted are as follows :

- (a) Gross Rentals or Annual Values
- (b) Subsidies
- (c) Rent-Free Periods (within the lease term)
- (d) Occupancy Rates

No adjustments will be made to the service charges because the survey from the buildings owners in this study reveals that unless under special circumstances, most of them do not significantly change their service charges over a long period of time.

³ A complete property cycle is the period between two troughs or two peaks.

Also, no adjustments will be made to the fitting-out period that are provided outside the lease terms as it is assumed that the time required to fit-out the premises remains the same, regardless of property market conditions.

In the process of adjusting the above factors affecting the net effective rental values, care will be taken to ensure that the final adjusted net effective rental values is achievable in a moderate market environment.

5.1 Property Cycle of Each Sector

In 2003, the average rentals of office and retail space in the central region were declining, reaching the trough in the first quarter of 2004 (1Q 2004). The previous trough in the rental cycle of both types of properties was in the third quarter of 1999 (3Q 1999). On the other hand, the complete occupancy cycle of the office and retail space in the central region, that is nearest to the base year of 2003 started in 1999 and ended in 2003. In the case of hotel space, the available complete cycle of gross lettings of hotel room nights in the central region, that is nearest to the base year of 2003 occurred from the first quarter of 1998 (1Q 1998) to the second quarter of 2003 (2Q 2003).

The respective cycles of each property type that is nearest to 2003 is summarized in Table 5.1.

Table 5.1: Complete Cycles for Each Property Type

Property Type	Rental Cycle	Occupancy Cycle	Gross Lettings ⁴ Cycle
Office	3Q 1999 – 1Q 2004	2Q 1999 – 4Q 2003	-
Retail	3Q 1999 – 1Q 2004	1Q 1999 – 1Q 2003	-
Hotel	-	-	1Q 1998 – 2Q 2003

Source: URA, STB, Knight Frank Research & Consultancy

⁴ Gross Lettings: Reflects both paid and complimentary lettings of hotel rooms as enumerated at midnight.

5.2 Adjustment Factors for Gross Rentals & Annual Values

To adjust the 2003 rental values to a more moderate level in the property cycle, the gross rentals of office and retail space provided by the building owners will be adjusted using the URA's "Rental Index for Office space in the Central Region" and "Rental Index for Retail space in the Central Region" respectively. With regards to gross rentals (for non-owner-operated hotel space) and annual value (for owner-operated hotel space), the adjustment factors will be based on the "Gross Lettings of Hotel Room Nights in the Central Region" cycle published by URA. As the "Gross Lettings of Hotel Room Nights" reflects both paid and complimentary lettings of hotel rooms as enumerated at midnight, the statistic would have taken into account changes in both the hotel room rates and the occupancy rates of the hotel over time.

In addition, after taking into considerations that the resolution of the data would have an impact on observations, the adjustment factors is proposed to be derived from the use of quarterly weighted-cycle averages.

Weighted-cycle averages aim to provide greater sensitivity in computation of the cycle averages by ensuring that the cycle start from the mid-point of the quarter when the trough occurred (trough-quarter) to the mid-point of the next trough-quarter. A weighted-cycle average is computed by assigning weights to each quarterly observation in the complete cycle period. As URA's quarterly statistics are computed for a 3-month period, each observation within the selected cycle period is multiplied by a weight of 3 while the first and last observations are multiplied by a weight of 1.5. The weighted-cycle average is then obtained by dividing the sum of all the weighted-observations by the total weights. The general formula for the calculation of the weighted cycle average is shown in Equation 4.

Equation 4

$$\text{Weight-cycle Average} = \frac{[\text{Ob}_1 \times 1.5 + \text{Ob}_2 \times 3 + \dots \dots + \text{Ob}_{n-1} \times 3 + \text{Ob}_n \times 1.5]}{\text{Total Weights}}$$

Where :

Ob = Observation

n = Total number of observations in the cycle

Total Weights = Total number of months in the cycle

Based on the weighted-cycle average of rental indices and the gross lettings of hotel room nights in the central region, the computed rental or annual value adjustment factors are as follows:

Equation 5

$$= \frac{\text{Weighted-Cycle Average Rental Index in the Complete Cycle}}{\text{Average Rental Index of Property Type in 2003}}$$

- Office Space: $90.03 / 76.50 = 1.177$
- Retail Space: $95.12 / 87.75 = 1.084$
- Hotel Space: $1,896 / 1,572 = 1.206$

The computations of the adjustment factors for the rentals or annual value for the respective property types are illustrated in Annex 2.

5.3 Adjustment Factor for Subsidies

Generally, from the information provided by the 10 building owners, there are no significant records of any subsidies provided to the tenants for leases committed in 2003. Hence, it can be inferred that the provision of subsidies are not a common leasing practice even in a trough market. Consequently, we can assume that in an average market, no subsidies are given too.

5.4 Adjustment Factor for Rent-Free Periods (in the lease term)

According to 2003's leasing information of office space in this study, the amount of rent-free periods provided by building owners inside the duration of the lease ranges from 0 to 3 months, depending on the rental paid, size of the space leased and the duration of the lease. Therefore, in an intermediate market, we can assume that the typical rent-free periods given to tenants inside the duration of the lease term ranges from 0 to 1.5 months.

In the case of retail spaces, as the practice of providing rent-free periods in the lease term is rare, no adjustment is needed. Rent-free periods are not applicable to hotel properties.

5.5 Adjustment Factor For Occupancy Rates

Similar to the adjustment factor for gross rentals, the 2003's occupancy rates for office and retail spaces provided by building owners will be adjusted using the quarterly weighted-cycle averages derived from the URA's "Occupancy Rate of Office space in the Central Region" and "Occupancy Rate of Retail space in the Central Region" respectively.

In the case of hotel space, as the "Gross Lettings of Hotel Room Nights in the Central Region" cycle that is used to adjust the gross rental (for non-owner-operated hotel space) or annual value (for owner-operated hotel space) would have taken into account changes in both the hotel room rates and the occupancy rates of the hotel over time, no additional adjustment are made to the occupancy of the hotel space.

Based on the weighted-cycle average of occupancy indices of office and retail spaces in the central region, the computed rental or annual value adjustment factors are as follows:

Equation 6

$$= \frac{\text{Weighted-Cycle Average Occupancy Rates in the Complete Cycle}}{\text{Average Occupancy Rates in 2003}}$$

- Office Space: $86.12\% / 82.44\% = 1.045$
- Retail Space: $89.99\% / 88.65\% = 1.015$

The computations of the adjustment factors for the occupancy rates of the respective property types are illustrated in Annex 3.

However, some of the office and retail buildings chosen in this study already enjoyed almost full occupancy in 2003, inferring that occupancy rates are less sensitive to changes in market conditions as compared to rental values. Hence, any adjustment to the occupancy rates using the above adjustment factors would result in the adjusted occupancy rates of certain buildings to be above 100%. This is not rational because the maximum occupancy rate of a development cannot exceed 100%. In fact, given the occasional renewing and changing of tenants in buildings, there would be periods when some of the lettable space in the building would be vacant. Therefore, it is unlikely for a building to achieve 100% occupancy on average.

According to the official statistics by URA, the highest occupancy rates for office and retail space in the Central Region in the selected property cycle was both achieved in 1Q 2001 at 89.7% and 91.3% respectively. These peak occupancy rates will set a benchmark where we will decide if there is to be an adjustment for the building's occupancy rates. This means that if the 2003 occupancy rate of a subject building as stated by the owner is higher than the highest peak occupancy rate in the same sub-market, there would not be any adjustments to the 2003 occupancy rate of that particular building. In the case where the reported office or retail occupancy rate of a subject building is lower than 89.7% and 91.3% respectively, we will adjust the building's occupancy rate in 2003 by the adjustment factor computed above. However the adjusted value will not exceed the maximum average occupancy rate of the property type in that cycle.

6.0 NO DOUBLE ACCOUNTING OF COST COMPONENT

There was a concern that the operating and maintenance (O&M) costs of the plants (i.e. chiller plants and the associated equipment) may be accounted for in both the capital and operating cost component of the Benchmark Cost as well as in the economic value of the space saving, leading to double accounting of the O&M cost component.

The Benchmark Cost comprises the cost of chilled water production from the supply, delivery, installation, maintenance and operating costs of the plants (i.e. chiller plants and the associated equipment) to the cost of the raw materials used by the plants and the space used. The supply, delivery, installation, maintenance and operating cost of the plants do not overlap the cost considerations used in the derivation of the economic cost of the space saved which is mainly concerned with the value of the property. In addition, the value of the space saving is derived from the net rental value, i.e. net of the cost of common services and management costs. Hence, the cost of operation and maintenance of chiller plants are only accounted for once in the Benchmark Cost.

7.0 RATIONAL FOR SELECTION OF BUILDING SAMPLE

The 10 buildings surveyed in this study encompass a mixture of office, retail and hotel developments. They are representative of the expected types of commercial buildings to be developed in the DC zone in the near future. In addition, the net effective rental values based on the information provided by the management of the 10 buildings show that they are within the range of 2003 rental values for the central area derived from our research. The 10 buildings are representative of the buildings envisaged to be in the DC Zone.

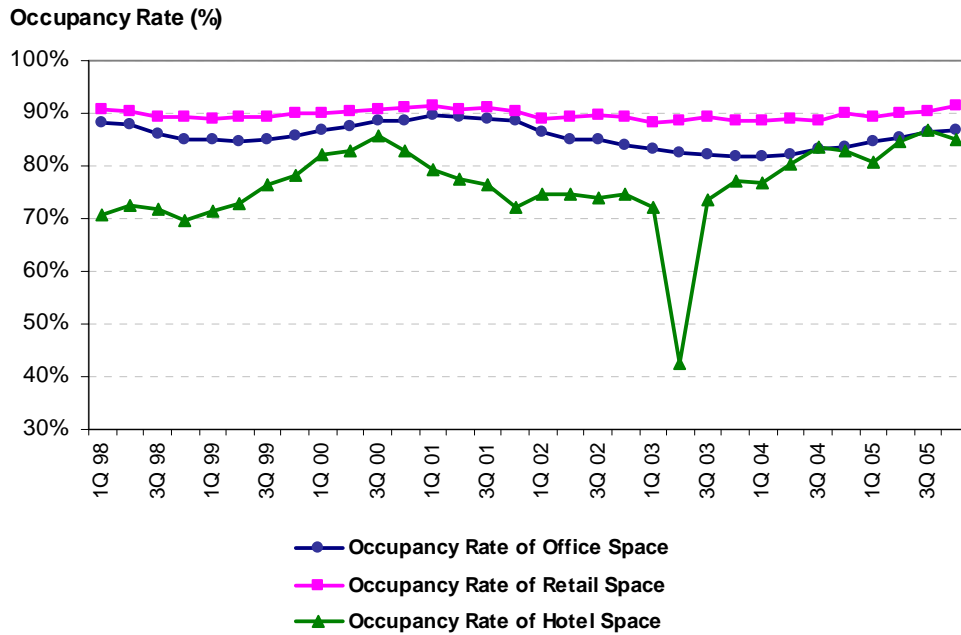
PROPERTY RENTAL MARKET CONDITIONS IN 2003

Between 2001 and 2003, the average occupancy rates of office, retail and hotel properties in Singapore declined steadily and bottomed in 2003. Hotels' occupancy rates were noted to be the most volatile among the three sectors, recording the most drastic fall of about 20 percentage points in 2Q 2003 (refer to Figure A1).

New demand for office space in 2003 remained negative, falling by another 90,000 square meters (sqm) in the Central Region. This may be due to the closure of some businesses that were badly affected hit by the slowdown. New demand for retail space in the Central Region was also at a low, growing by only about 8,000 sqm, indicating the poor business sentiments and the reluctance of businesses to expand (refer to Figure A2).

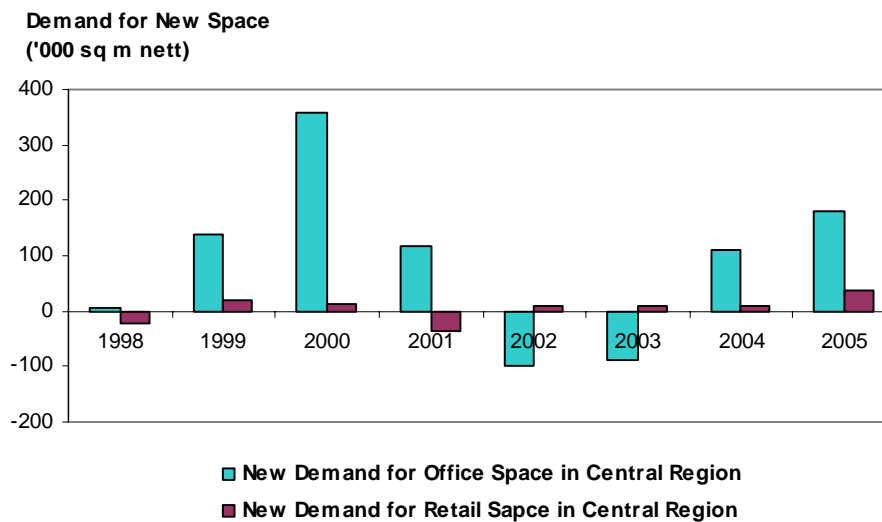
The contraction of demand for space across all sectors has caused rentals to fall to the trough. Hotels were the most sensitive industry, recording an almost immediate plunge in room rates. Rentals for office and retail space experienced a more gradual drop in rentals that was extended to the start of 2004 (refer to Figure A3).

Figure A1: Occupancy Rates of Office, Retail and Hotel Properties in the Central Region



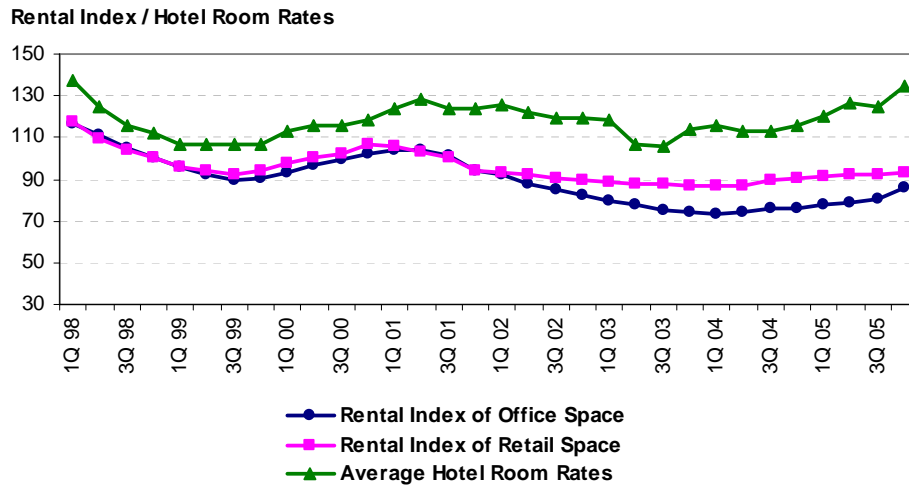
Source: URA, STB

Figure A2: New Demand for Office and Retail Space



Source: URA

Figure A3: Rental Index and Hotel Room Rates



Source: Urban Redevelopment Authority, Singapore Tourism Board

**Rental Indices for Commercial Spaces in Central Region
Computation of Rental Cycle Average**

Period	Rental Index of Office Space	Rental Index of Retail Space	Gross Lettings of Hotel Room Nights* ('000 Room-Nights)
1Q 1998	116.6	117.7	1,733
2Q 1998	111.0	109.8	1,792
3Q 1998	105.0	103.7	1,789
4Q 1998	100.0	100.0	1,765
1Q 1999	95.6	96.3	1,773
2Q 1999	91.9	94.2	1,839
3Q 1999	89.9	92.5	1,940
4Q 1999	90.7	94.5	1,995
1Q 2000	93.2	97.4	2,039
2Q 2000	97.1	100.4	2,039
3Q 2000	99.6	102.1	2,134
4Q 2000	102.1	106.5	2,109
1Q 2001	104.1	106.2	2,024
2Q 2001	103.8	103.3	1,992
3Q 2001	100.9	100.5	1,994
4Q 2001	94.1	94.5	1,827
1Q 2002	91.9	93.1	1,896
2Q 2002	87.7	92.5	1,946
3Q 2002	85.2	90.7	1,923
4Q 2002	82.5	90.0	1,931
1Q 2003	79.6	88.8	1,785
2Q 2003	77.7	87.7	820
3Q 2003	74.9	87.6	1,772
4Q 2003	73.8	86.9	1,911
1Q 2004	73.4	86.4	1,905
2Q 2004	73.9	87.1	2,045
3Q 2004	75.8	89.4	2,124
4Q 2004	76.4	90.1	2,113
1Q 2005	78.1	91.6	1,991
2Q 2005	78.9	92.1	2,117
3Q 2005	80.7	92.7	2,186
4Q 2005	86.1	93.3	2,130
Weighted-Cycle Average	90.03	95.12	1,896
2003 Average	76.50	87.75	1,572
Adjustment Factor	1.177	1.084	1.206

*Gross Lettings: Reflects both paid and complimentary lettings of hotel rooms as enumerated at midnight.

**Occupancy Rates of Commercial Spaces in Central Region
Computation of Occupancy Cycle Average**

Period	Occupancy Rate of Office Space[#]	Occupancy Rate of Retail Space[#]
1Q 1998	88.25%	90.58%
2Q 1998	87.93%	90.31%
3Q 1998	86.12%	89.46%
4Q 1998	85.15%	89.23%
1Q 1999	85.01%	88.94%
2Q 1999	84.79%	89.30%
3Q 1999	84.91%	89.39%
4Q 1999	85.59%	90.09%
1Q 2000	86.83%	89.90%
2Q 2000	87.33%	90.31%
3Q 2000	88.66%	90.65%
4Q 2000	88.73%	90.99%
1Q 2001	89.73%	91.28%
2Q 2001	89.17%	90.66%
3Q 2001	88.85%	91.03%
4Q 2001	88.67%	90.27%
1Q 2002	86.35%	89.10%
2Q 2002	85.15%	89.27%
3Q 2002	84.94%	89.64%
4Q 2002	83.92%	89.43%
1Q 2003	83.28%	88.17%
2Q 2003	82.68%	88.59%
3Q 2003	82.17%	89.21%
4Q 2003	81.64%	88.64%
1Q 2004	81.67%	88.40%
2Q 2004	82.16%	88.77%
3Q 2004	83.07%	88.50%
4Q 2004	83.62%	89.98%
1Q 2005	84.58%	89.25%
2Q 2005	85.32%	89.83%
3Q 2005	86.36%	90.21%
4Q 2005	86.93%	91.32%
Weighted-Cycle Average	86.12%	89.99%
2003 Average	82.44%	88.65%
Adjustment Factor	1.045	1.015

[#]Private and public sector space.