

5.0 FITTING-OUT / RENOVATION WORKS GUIDELINES

This section covers renovation guide, application for commencement of works, protection/cleaning of common property etc.

Please refer to NEA guidelines on noise allowance/ guidelines during periods of renovation.

Fitting-out/ tenancy works are allowed to be carried out, subject to no complaints from other users/tenants in the vicinity and upon JTC approval. All noisy/disruptive renovation works are to be carried out after office hours upon obtaining approval from JTC. No fitting-out/ tenancy works are allowed to be carried out on Sundays and Public Holidays unless approved by JTC.

Prior to any fit out or renovation works, JTC/FMC will brief the tenant on the various regulations and guidelines (Refer to **Annex B** checklist). JTC/FMC will perform inspections during and after any fit out or renovation works.

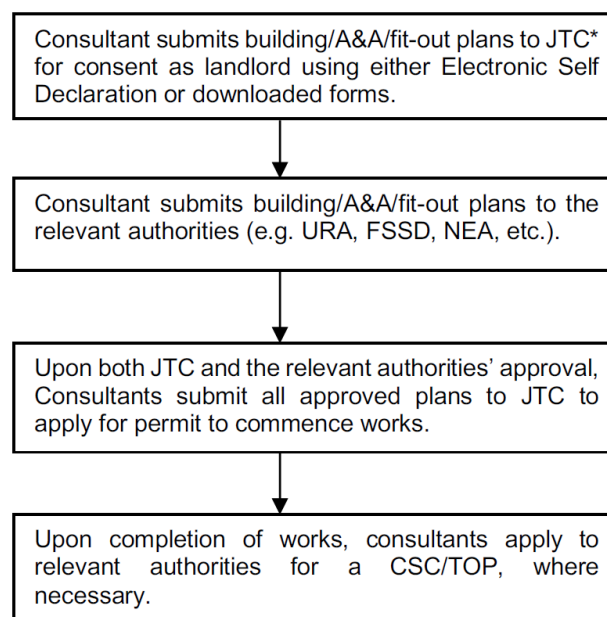
5.1 Taking-over of Premises

Tenants shall endorse on the Acknowledgement Form upon collection of the keys to their unit(s) from/to the FMC.

5.2 JTC Plan Submission Process

Tenants are required to prepare and submit floor layout plans of your alteration and addition (A&A) works and fit out plans. These plans must be done in accordance to the terms of your tenancy/lease and the procedures stated in the guide entitled "Submitting Plans for Building and Other Works" (this guide is given to Tenants when they are offered new premises by JTC, <http://www.jtc.gov.sg/customer-services/Pages/plan-consent-guide.aspx>).

The overall plan approval process is as follows:



*Note: All endorsed/approved plans have to be submitted to JTC through the system, please refer to <http://www.jtc.gov.sg/Plan-Consent/Pages/default.aspx> for more details on Plan Consented by JTC.

Abbreviations:

JTC: JTC Corporation
CSC: Certificate of Statutory Completion
SCDF: Singapore Civil Defence Force
FSSD: Fire Safety and Shelter Department
TOP: Temporary Occupation Permit
URA: Urban Redevelopment Authority
NEA: National Environmental Agency
QRA: Quantitative Risk Assessment

All A&A works to Tenants' premises shall be endorsed by JTC. It shall also be approved by the relevant government authorities before Tenants can commence such works. This is necessary regardless of whether the structures are temporary or permanent. These modifications include but not limited to:

- (i) installation of all heavy machinery/equipment in the tenanted area
- (ii) all installation of equipment on the roof top
- (iii) demolition, puncturing, hacking, hammering, nailing, bolting, drilling, screwing/anchoring on or into walls, floors, ceilings, pillars.
- (iv) erection of internal partitions and dry wall.

Prior to any fit out or renovation works, JTC/FMC will brief the tenant on the various regulations and guidelines (Refer to **Annex B** checklist). JTC/FMC will perform inspections during and after any fit out or renovation works.

Tenants shall not drill into or hack the floor structure in the premises without JTC's written consent.

Tenants are not allowed to carry out any installation of air-conditioning system, ventilation system, electrical system, telecommunication equipment, plant, machinery, fixtures, fittings or other installations in the premises prior to plan endorsement by the relevant authorities and JTC. A consultant (such as a professional engineer or registered architect or Qualified Person) would have to be engaged to assist in the certification process.

Tenants are encouraged to engage the building contractor for such works so as not to nullify its warranty; otherwise, the Tenant's contractor shall take over the warranty of the affected alarm panel. Tenants are not allowed to carry out any works that will affect the structure of the building as this may delay or prevent the issuance of the CSC.

Tenants shall ensure that access panels are provided where necessary to enable JTC/FMC to carry out regular maintenance of any JTC controlled services within the tenanted premises. Tenants shall arrange for their Contractors to conduct joint inspection with the FMC before installing the cable run along the common areas to the services risers. Any damages to the floor, wall, door finishes, etc at the common areas caused during the transport of the materials shall be reinstated by the Tenants at their costs.

5.3 Application for Commencement of Works

Tenants are to ensure that the Contractors they have engaged for renovation only work within their units and comply with the terms and conditions of the renovation guide. Before any building works can be carried out, Tenants' Contractors shall obtain approval through JTC's Facility Management Company (FMC) by submitting the following documents prior to commencement of any site works:

- 5.3.1 Renovation Guide forms R1 to R4 (Please refer to **Annex C** Form R1 to R4)
- 5.3.2 Risk assessment form (Please refer to **Annex D**)
- 5.3.3 Permit to work form (Please refer to **Annex E**)
- 5.3.4 Written Direction that plans submitted through CORENET is approved
- 5.3.5 Full set of softcopy plans approved in CORENET by JTC. These plans include but are not limited to:
 - Electrical Drawings (with LEW approval)
 - Sprinkler Layout (With FSSD approval)
 - Office Furniture & Partition Layout (with FSSD approval)
 - Air-Conditioning Layout
 - Energy Consumption per square meter
 - Type of light fittings used
 - Any other utilities requirements eg. DI Water, Chilled Water etc.
 - Works that will affect the external aesthetics of the building and unit

5.4 Temporary Electricity Supply

Tenants can apply to use temporary electricity supply from power points at common corridors (e.g. for renovation purposes or alterations and additions works).

When doing so, do bear in mind the following:

- (i) Submit an application form to the JTC, stating the purpose of tapping the temporary electricity supply.
- (ii) Only 13 amperes of electricity supply is available for use.
- (iii) A nominal fee consisting of the following is payable:
 - Administration fee per application: \$25 (exclude GST)
 - Tapping from 13 amperes switch-socket per socket per day: \$6 (exclude GST)
- (iv) For usage above 13 amperes of electricity supply, contractors are required to provide their own temporary power supply e.g. generator for the works. Prior permission for the use of such equipment has to be sought from JTC.

**The above rates are subject to revision and JTC reserves the right to revise the rates without prior notice to the Tenants.*

5.5 Protection and Cleaning of Common Areas

Tenants' contractors are required to implement protection measures for the common areas during the renovation works and during movement of bulky items along the common areas. This would include the use of elevator pads, wall pads, floor protection layer and other suitable protection covers to protect the common areas and lifts from damage. All reinstatement cost due to damage and clean-up of common areas will be borne by the tenants or tenants' contractors.

Tenants' contractors will have to put in place suitable common area protection and to liaise with FMC for a joint site survey prior to work commencement. If required, FMC may request for Tenants' contractors to perform Pre-Condition Survey of the common area prior to work commencement to show documented proof of common areas condition prior to commencement of work.

5.6 Inspection of Common Areas (Pre- & Post- A&A/ Renovation Works)

JTC shall conduct joint inspections with the Tenants' Contractor before and upon completion of the renovation works to ensure that there are no damages to the common areas due to the course of the renovation works that has been carried out within the Tenant's unit.

5.7 Use of Loading and Unloading Bays

For the full list of detailed guidelines governing the usage of loading bays and corridors at Chemicals Hub, please refer to **Annex F**.

Tenants who wish to make use of the loading and unloading bays and/or are expecting a delivery through the loading bays are to inform the JTC at least 3 hours prior to use (See **Annex A**). During office hours (0700hrs-1900hrs), tenants need not escort contractors from the loading bay but are required to receive the contractors at their individual units.

Tenants or their representatives must be physically present for the use of loading/unloading bays after office hours (1900-0700hrs). This is to ensure that goods are properly delivered to the intended tenants.

5.8 Tenants' Signage Guidelines

One signage is allowable per tenant. The size should not exceed 800mm long by 600mm high. The side of the signage (left or right) is to be 100mm away from the door frame. The top signage is to be aligned with the top of the door frame.

5.9 MECHANICAL INSTALLATIONS

5.9.1 Fire Protection System

Any modifications to the existing fire alarm panel shall be subjected to the approval of JTC/FMC. Tenants are encouraged to engage the building contractor for such works so as not to nullify its warranty; otherwise, the Tenant's contractor shall takeover the warranty of the affected alarm panel. Tenants shall make advance arrangement with JTC/FMC to isolate any smoke-detector that is in proximity to the site where dusty hacking or drilling works are carried out.

5.9.2 Sprinkler System

Sprinkler heads in the sprinkler system for the premises are suitable for temperatures not exceeding 68°C. This is in accordance with FSSD's requirements.

Tenants shall engage Consultants to conduct feasibility study for modification to the 1st layer sprinkler pipes and connection to the existing sprinkler pipes. The pipes shall be flushed to acceptable standard before connection to the existing tee-off points to avoid contaminants in the sprinkler system. Tenants shall indemnify JTC against all damages, injuries caused during the renovation works.

Payment of water drainage and recharge fee for sprinkler pipe tapping works shall be made to JTC, at JTC Summit; the payment shall be supported with FSSD approved drawings. The sprinkler contractor shall forward a copy of its original payment receipt to the FMC to make arrangement for the draining of the pipe-work at least three (3) working days in advance. The

water drainage and recharge fee shall be subjected to prevailing rates. Tenants' contractors are to confirm the rates with the FMC.

The sprinkler contractor shall keep at least 1 watch-hour after the completion of water recharge so as to ensure no leakages in the sprinkler pipes. The sprinkler pipe shall be recharged back and normalized by 5pm within the same day, including weekends and public holidays. No drainage and recharge works shall be carried out after office hours.

5.9.3 Public Address System

For Public Address system (PA system), Tenants are to see prior approval and coordination from JTC/FMC before tapping the common areas speakers. There shall not be any tapping where the efficiency and functionality of the PA system will be hindered. If the tenanted areas require additional amplification due to the A&A works or require additional speakers, it shall be at the Tenants' cost.

Tenants must submit QP approved drawing(s) for PA system modifications to JTC for endorsement prior to commencement of works. Where A&A works are carried out, a pre- and post-PA system checks must be carried out with the JTC's term contractor for PA system to ascertain that the PA system is not affected by the A&A works. The cost of pre- and post- PA testing and any reinstatement works, if necessary must be borne by the tenant.

5.9.4 Submission of Plans for Fire Protection System

Tenants must preside over the engagement of a Registered Electrical Consultant or Professional Engineer to undertake the planning, design, supervision and maintenance of fire alarm/heat detector modifications/alterations of their premises according to the FSSD requirements.

The Electrical Consultant/Professional Engineer shall submit one (1) set of fire alarm drawings to FSSD. The drawings shall indicate the existing fixtures (if any), the proposed modifications of the fire alarm and the layout of the machinery, in accordance with the requirements of FSSD for approval.

If there is alteration of existing automatic fire alarm and sprinkler system installation, alteration plans must be submitted to FSSD for approval on the fire safety aspects. A Professional Engineer, registered with the Professional Engineers Board of Singapore is required to sign off all air-conditioning, fire alarm and sprinkler system plans.

5.9.5 Plumbing and Sanitary Works

Tenants shall ensure that all floor traps and waste pipes are free of chokes and appropriate insulation is provided to prevent future condensation.

Laboratory Tenants are to ensure that any waste water / chemical discharges from the premises comply with NEA's regulations, guidelines and limits relating to trade effluent discharge into the sewer system. Dilution of waste water / chemical discharges should be carried out where appropriate (as per PUB's guidelines) and shall be at tenant's own cost. All discharges are traceable to the source. Tenants found to be in breach of NEA and PUB's waste water guidelines will be reported to the relevant authorities.

5.9.5.1 Tenants shall not dispose of any chemicals into the floor traps and sewage system.
All chemicals have to be disposed through licensed waste disposal companies only.

5.9.5.2 Tenants shall service and maintain the individual waste sump for their respective unit(s)
at their own costs.

Concentrated chemicals, toxic or otherwise should be separately collect and dispose off from the premises in accordance with NEA's guidelines and regulations.

5.9.6 Telephone Connections/ Internet Services

Please apply directly to the service providers for telephone and internet connections.

5.10 Electrical Installations

For all installations in Tenant premises, please ensure that the following actions are taken:

- Engage a Registered Electrical Consultant or Building's LEW to submit two (2) sets of electrical single-line diagrams to JTC. Registered Electrical Consultant will also need to submit through Building's LEW for any endorsement of plans.
- Obtain prior written consent from JTC for the installation of electrical switchboard wirings and equipment to your premises, including (a) over-current protective devices in JTC's switch room; and (b) over-current and earth leakage protective devices in the premises by submitting the application forms for electricity supply to premises (Please refer to **Annex G** – Application of Electricity Supply and CS/3 Form).
- Ensure that your installation does not create electromagnetic/electric interference and heavy power surges, which may affect the use of communications system/ neighbouring premises.
- Ensure that your machinery is adequately insulated to minimize noise and vibrations to neighbouring premises.
- Ensure that your installation does not affect the structure or safety of the building.
- Ensure that all lighting power density shall minimally meet standards set in the GreenLease (Refer to **Annex H**)
- As part of Chemical Hub's efficiency drive, all electrical usages will be monitored.

5.10.1 Electricity Supply and Power Meter

Tenants shall engage a License Electrical Worker (LEW) to apply for kWh meter before tapping on any electricity supply from the electrical distribution board in the Tenant's unit.

5.11 Air-Conditioning System

Chemicals Hub is a Green Mark Platinum building designed with natural ventilation and hence tenants are advised to refrain from installing air-conditioning units within the Production Block

units. Any provision of air-conditioning to a tenant's unit shall tap on JTC's chilled water supply, and tenants should not install their own direct expansion/split system air-conditioning unit.

Tenants shall engage Consultants to carry out a feasibility study for tapping off at the chilled water header located at each tenant's premises or from the rooftop. All such tapping of chilled water is subject to JTC's review and endorsement. There shall not be sharing of the service shaft with JTC chilled water pipes. Tenants shall indemnify JTC against all damages, injuries caused during the renovation works.

The selection of air-conditioning system shall comply with the chilled water supply temperature of $8^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and chilled water return temperature should not exceed 15°C . Air Handling Unit (AHU) shall complete with trend logging of temperature, pressure and flow rate.

Tenants shall only install chilled water air handling unit or fan coil unit at the premises, split unit air-conditioning system are not permitted to be installed in the building unless prior approval from JTC have been obtained. All chilled water supply to tenanted areas shall be obtained from the landlord's chilled water supply. The chilled water is strictly meant for normal air-conditioning purpose. No drainage of the chilled water is permitted. Chilled water is not permitted for use in manufacturing process, direct cooling of equipment such as X-ray machine, vacuum pump, etc.

The aircon system installed by Tenant shall meet standards set out in the Green Lease (Refer to **Annex H**)

Prior to tapping on the chilled water, Tenants shall carry out:

- a. Flushing and chemical cleaning of their chilled water pipes
- b. Fill up the chilled water pipes with water and let remains for 24-hours and witnessed by JTC/FMC
- c. Thereafter, water sample to be collected in the presence of JTC/FMC for water analysis
- d. Submit water analysis report to JTC/FMC before approval for connection to JTC's chilled water supply. The results on the chilled water lab test report shall be in accordance to current acceptable standards as required by the authorities and the landlord.

All the BTU meters located in the tenanted areas must not be relocated and must be accessible by the JTC/FMC without any obstruction. If relocation is necessary, JTC/FMC shall be notified, as such, the calibration of the BTU meter shall be subject to the approval of JTC through the nominated JTC/FMC. Tenants shall ensure that their BTU meters and its related devices are accessible by JTC/FMC for maintenance service at all times. As part of Chemical's Hub efficiency drive, the BTU meter readings will be monitored by JTC's building management system. In the event that there are any discrepancies in the accuracy of the BTU meter, JTC reserves the right to determine the consumption in a fair and reasonable manner.

Access panels shall be provided where necessary and clear ceiling spaces are required for the maintenance team to carry out calibration works. Tenants shall ensure that the temperature sensor is removable from the thermo-well at all time; the sensor should not be adhered to the thermo-well or pipe during insulation of the pipe-work.

All the thermostats for the fan coil units are located in the ceiling. If necessary, the Tenant shall relocate the thermostat at your own cost. However, thermostats are to be reinstated back to their original location should the Tenant return the unit to JTC.

Where opening of duct shaft is required, Tenants shall comply with the building safety requirements by ensuring that proper temporary enclosure is put up when works is in progress in the shaft. Upon completion of works in the shaft, the enclosure shall be reinstated to the original condition, such as painting and wall texture to match with the adjacent wall, etc. Fireproofing material and metal gratings between each floor shall be properly reinstated.

Tenants shall not make use of the existing services on the ceiling level, etc. serving the upper floor tenants, for supporting their new services as these are non-load bearing services. Tenants will be held liable for any damage to these services as a result of negligence of their contractors.

Tenants are required to provide necessary insulation to floors, walls or ceiling slabs to ensure operation of their air-conditioning system does not result in any moisture condensation to adjoining premises. Typically, areas of low temperatures such as clean rooms, cold rooms and other areas with prolonged air-conditioning shall be suitably insulated to avoid condensation to neighbouring premises. Similarly, areas of high temperatures shall also be appropriately controlled in the same manner or otherwise.

JTC shall not be liable to the Tenant or his employees, agents, authorised persons or visitors, or his or their property in respect of any interruption in the services provided by the Landlord by reason of repair, maintenance, damage or refurbishment works; or mechanical or other defect or breakdown including but not limited to breakdown in electricity, gas and water supply, pumps and lifts.

5.12 Submission of Plans for Air-conditioning System

The Consultant or Professional Engineer shall submit one set of the proposed air-conditioning system drawings to relevant authorities for endorsement. Three (3) sets of the approved drawings and relevant letters shall be submitted to JTC/FMC before the commencement of work.

5.13 Application for Air-Con Extension

Air-con extension rates for office spaces will be charged at prevailing rates as determined. The relevant charges will be billed to the Tenants by JTC accordingly. Please refer to **Annex I** for the Application for Extension of Air-Con form.

5.14 Back Up Air-Conditioning for Essential Services

Use of split unit systems that do not use the building's chilled water supply are typically not allowed. However, subject to JTC's approval, split unit systems may be permitted for installation as back up air-conditioning provision for cooling of essential services. JTC will not bear responsibility for damages to equipment and/or services due to unforeseen breakdowns or disruptions in our building's chilled water supply.

5.15 APPLICATION AND SUBMISSIONS OF PLANS FOR WATER SUPPLY

5.15.1 Water Supply

Four (4) copies of sketch plans are to be submitted to the Water Conservation Department, SP Services for application of water sub-meter. These plans must show the section and layout of the plumbing and shall be prepared by a licensed plumber.

5.13.2 Chilled Water Supply

Tenants shall apply to JTC/ FMC for tapping of chilled water supply for their equipment. Refer to **Annex J** for chilled water supply application form. Tenants shall **install the BTU meters (if not provided) and** provide the chilled water flow rate of all AHUs and **FCUs** installed at their premises to the FMC to enable the balancing of the chilled water flow to the entire block. Tenants' chilled water charges will be billed at prevailing rates as determined (Refer to **Annex J** for application).

5.13.3 NEWater Supply

Four (4) copies of sketch plans are to be submitted to the Water Conservation Department, SP Services for application of water sub-meter. These plans must show the section and layout of the plumbing and shall be prepared by a licensed plumber.

5.14 Emergency Supply (E-Supply)

5.14.1 Application for installation of E-Supply generator

Tenants who wish to have E-Supply for their essential equipment may apply for installation of a dedicated E-Supply generator. Specification and proposed connection of this generator including three (3) copies of single line diagram will have to be submitted for JTC approval.