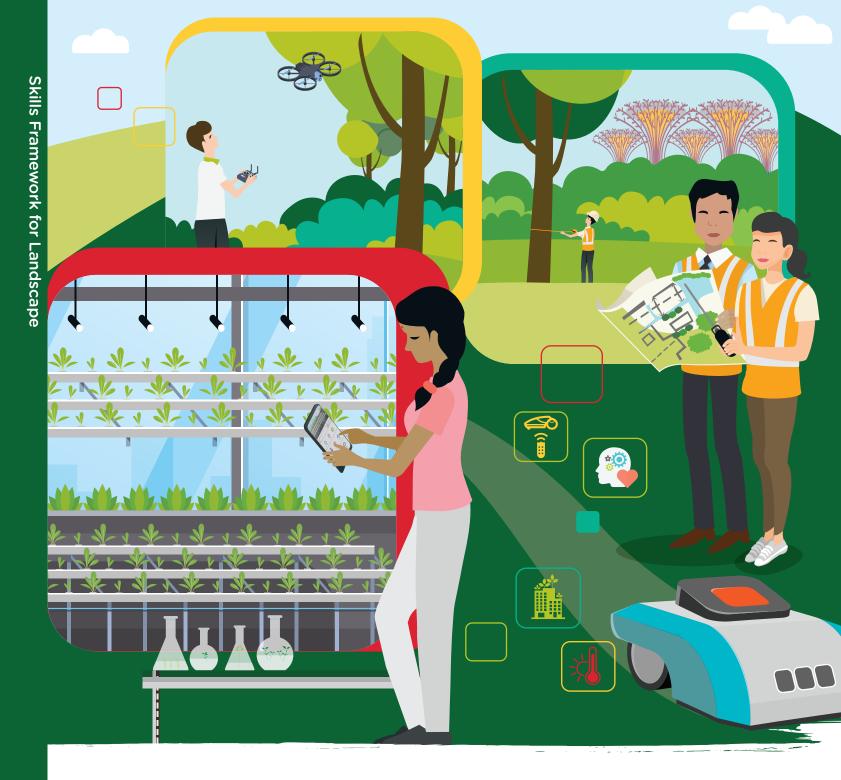
## SKILLS FRAMEWORK FOR LANDSCAPE Career Pathways



Scan this QR code to find out more about the Skills Framework for Landscape







# Skills Framework for Landscape





A Guide to Occupations and Skills

PUBLISHED IN MAY 2019

skillsfuture.sg

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## About the Skills Framework

The Skills Framework is a SkillsFuture initiative developed for the Singapore workforce to promote skills mastery and lifelong learning. Jointly developed by SkillsFuture Singapore (SSG), Workforce Singapore (WSG), and National Parks Board (NParks), together with employers, industry associations, unions, education and training providers, the Skills Framework for Landscape provides useful information on:



With the Skills Framework, individuals are equipped to make informed decisions about career choices, as well as take responsibility for skills upgrading and career planning.



Assess Career Interests

- Understand career pathways
- Recognise personal attributes required



Prepare for Desired Jobs

• Understand

skills and

required

competencies



Find Avenues to Close Skills Gaps

- Identify relevant training programmes to equip oneself with the required skills and competencies
- Participate in on-the-job training opportunities provided by companies

Skills Upgrading and Mastery

Renew, Upgrade and Deepen Skills

- Plan for career development/ transition
- Recognise skills and competencies required for the intended job role
- Identify training programmes to upgrade and deepen skills

## Singapore Landscape Sector: Building a Biophilic City in a Garden



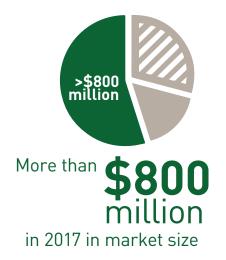
Singapore has an enviable reputation as one of the greenest cities in the world. Did you know that more than seven million trees can be found in our densely populated city-state? Of these, around two million are found in urban areas. There are an even greater number of shrubs, climbers, grasses and other vegetation that are curated, purposefully planted and maintained. Our greening effort is crucial to the continued sustainability and enhancement of our living environment, as landscaping softens the glass, metal and concrete facades of buildings and other urban structures, as well as encourages more human interactions with nature.

Green spaces in Singapore will be increased by 1,000 hectares in the next 10-15 years, as we look forward to iconic projects such as the Bidadari and Tengah new towns, increased connectivity for green corridors and more people-centric ecological gardens for residents. To keep pace with this growth, the sector has to transform to include more progressive, productive and innovative firms with highly skilled and professional workforce, allowing us to do more with less. In this regard, the sector will be focused on capacity-building, technology adoption, job redesign and skills deepening in the coming years.

## **Key Statistics**



More than **650** establishments in Landscape Design / Architecture, Landscape Supply, and Landscape Implementation and Maintenance











## Future Developments



As Singapore continues to grow as a biophilic City in a Garden, it is necessary to have a professional and progressive sector that can provide innovative, sustainable and efficient landscaping solutions for our verdant built environment and become ready for the world.

The landscape sector is poised to transform and grow through the enhancement of capabilities and adoption of new technologies. Under the Landscape Sector Transformation Plan, a roadmap for the sector's development till 2030, three thrusts were identified:



### **Growing Net Revenue**

- Move into higher valued-added (VA) services
- Create new export platforms i.e. internationalisation



### Improving Productivity

- Adopt digitalisation and mechanisation
- Redesign greenery for productive and sustainable maintenance

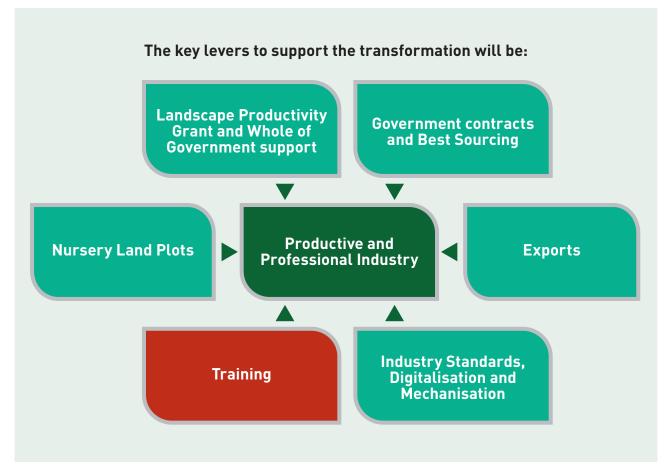


### Professionalising the Workforce

- Shift toward greenery management and valued added skills
- Develop multi-skilled, technologically-adept workforce
- Adopt guidelines and systems for higher quality landscaping

## Future Developments





## Skills in Demand

As the sector continues to transform, these are some examples of skills in demand which consist of existing skills augmented by emerging skills. Those seeking successful careers in the landscape sector can set themselves apart by developing these attributes and acquiring these skills in demand.

### **EMERGING TRENDS**



### Digitalisation, Automation and Mechanisation

The industry is driven by a need to keep its workforce lean with high productivity through mechanisation and automation such as the use of robotic grass mower.

Deployment of digital platforms such as Building Information Modelling (BIM) is enabling organisations to digitally integrate Design, Construction and Operations and Maintenance processes.



### **Ecology and Biodiversity in Urban Design**

Ecology and biodiversity in urban design aims to create urban environments that make a positive on-site contribution to biodiversity, thereby contributing to the health and well-being of a society and a more sustainable development.

### Biophilia

Biophilic design is a sustainable design strategy that incorporates reconnecting people with the natural environment. In recent years, there has been a notable shift in focus from aesthetics to biophilia in the integration of greenery in architectural design, as a growing body of research shows that biophilic experiences increase health and well-being, as well as productivity.



### **Skyrise Greening**

Skyrise greening is a strategy aimed at extending greening skywards in the built environment through the greening of facades, balconies, mid-level and topmost roof spaces. This is particularly important in land scarce Singapore, and brings about many benefits such as the mitigation of urban heat island effect, improving air quality and biodiversity and creating more communal spaces for social interactions.



#### Sustainable Landscape

Sustainable landscaping encompasses a variety of practices that seek to strike a balance between aesthetics, functionality and environmental issues. These practices are applied in every stage of landscaping, from the design, implementation and construction and finally greenery management.

### **Microclimate and Thermal Comfort**



Landscape design is increasingly influenced by microclimatic considerations, and the analysis of thermal comfort and other microclimatic parameters are used to make design decisions aimed at creating spaces that are more comfortable for humans.

### Water Sensitive Urban Design Water sensitive urban design is a land planning a

Water sensitive urban design is a land planning and engineering design approach which integrates urban water cycle into urban design to minimise environmental degradation and improve aesthetic and recreational appeal. In Singapore, this will require knowledge in Public Utilities Board's Active, Beautiful and Clean (ABC) water design guidelines and storm water management.

### EMERGING SKILLS

Automation of Landscape Operations

**Biophilic Design** 

Building Information Modelling Application

Ecology in Landscape Design, Implementation and Management

Environment Management in Landscape Operations

Microclimate in Landscape Design

Skyrise Greenery Design and Implementation

Skyrise Greenery Maintenance

Sustainable Landscape Design

Water Sensitive Urban Design

Workflow Digitalisation

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## **Desired Attributes**

For those who love the great outdoors, want to experience working with trees and plants in biodiversity-rich places, and have a desire to improve our living environment and quality of life, the landscape sector offers diverse opportunities to develop your passion and grow your career. A successful individual in the sector is one who possesses the following attributes.

# DESIRED ATTRIBUTES



#### Passionate

Enthusiastic about landscape work and possesses a desire to continuously improve and stay up-to-date with industry trends and knowledge.



**Resilient** Adapts well to challenges in a fastchanging, transformative environment.



### **Team Player**

Takes ownership of work tasks and understands that each person is part of a larger team working together to bring about success at the workplace.



**Problem Solver** Able to quickly respond to and efficiently resolve problems or issues that arise.



#### **Service Oriented**

Possesses a strong service mindset to create a positive experience for customers.

A skilled workforce is essential in sustaining Singapore's global competitiveness. There is a wide range of initiatives and schemes available to both individuals and employers to promote skills acquisition and upgrading.

### FOR INDIVIDUALS

### SkillsFuture Mid-Career Enhanced Subsidy

All Singaporeans aged 40 and above will receive up to 90% course fee subsidy for SSG-funded courses, including modular courses in publicly funded post-secondary education institutions, and additional reductions in Ministry of Education (MOE)funded diploma and degree courses.

### **SkillsFuture Study Award**

A monetary award of \$5,000 for adults in their early- and mid-career to develop and deepen their skills in future growth clusters.

### Landscape Apprenticeship Programme

This programme provides a structured career path for individuals with leadership qualities and keen interest in developing a career in landscaping. Successful applicants will be placed with participating landscape companies and be guided by a mentor during the apprenticeship, in order to achieve a high level of competency within a relatively short period of time.

### **SkillsFuture Credit**

This initiative aims to encourage individual to take ownership of skills development and lifelong learning. All Singaporeans aged 25 and above will receive an opening credit of \$500 which will not expire.

### **SkillsFuture Qualification Award**

This award recognises the efforts of Singapore Citizens in attaining full Singapore Workforce Skills Qualifications (WSQ), which equip them with comprehensive and robust sets of skills to perform their jobs competently, pursue career progression and explore new job opportunities.

Initiatives and Schemes by: SkillsFuture Singapore

Workforce Singapore





### FOR EMPLOYERS

### Capability Transfer Programme (CTP)

This programme helps build deeper capabilities in the local workforce through the transfer of specialised knowledge and skills from foreign experts. Funding support from the CTP may include salary and training subsidy for the foreign specialist and local trainee, and for the Singaporean trainee who is on overseas attachment. In the case of industry level projects, funding of equipment will be considered on a case-by-case basis.

### WorkPro

WorkPro encourages employers to implement progressive employment practices through job redesign, age management practices and flexible work arrangements. Companies can receive grants of up to \$425,000 to support the implementation of these initiatives and create an easier, safer and smarter workplace.

Initiatives and Schemes by: SkillsFuture Singapore

Workforce Singapore





### FOR INDIVIDUALS AND EMPLOYERS

#### **SkillsFuture Series**

The SkillsFuture Series is a curated list of short, industry-relevant training programmes that focus on emerging skills.

#### SkillsFuture for Digital Workplace

The SkillsFuture for Digital Workplace programme aims to prepare the workforce with the right skills and mindset to take advantage of the opportunities in the future economy.

### P-MAX

The Place-and-Train programme matches jobseeking Professionals, Managers, Executives and Technicians (PMETs) to suitable positions in small and medium enterprises (SMEs), and assist SMEs to better recruit, train, manage and retain their newly-hired PMETs.

#### **Career Matching Services**

WSG's Careers Connect and NTUC's e2i centres offer an expanded suite of career matching services tailored to jobseekers' needs. Jobseekers can seek advice from professionals to guide them in their job search, as well as in their career planning and development. Employers can receive recruitment advice to uncover new talent and find the right people for their business needs.

#### SkillsFuture Work-Learn Programmes

This initiative comprises a suite of worklearn programmes designed to provide individuals (mainly ITE, and polytechnic students, and mid-career switchers) with a head-start in the industry of their choice. It is developed in collaboration with the industry to ensure industry relevance.

An example is ITE's Work-Learn Technical Diploma in Arboriculture and Horticulture (to be launched in Apr 2020).

### **Career Trial**

Jobseekers can gain experience and confidence through a short-term career trial to be assessed for employment paying \$1,500 or more. They will receive training allowance during the trial period and retention incentives if they stay on the job for more than three months.

Employers can assess a jobseeker's job fit via a short-term career trial before offering formal employment for jobs paying \$1,500 or more. Companies can receive up to \$5,400 of salary support to hire eligible Singapore Citizens who have been unemployed for 6 months or more.

### Professional Conversion Programmes (PCP)

The PCPs help mid-career Singaporeans and Permanent Residents reskill and move into new occupations or sectors with good career prospects.

#### Initiatives and Schemes by:

SkillsFuture Singapore

Workforce Singapore

National Parks Board



### FOR INDIVIDUALS AND EMPLOYERS

#### **Career Support Programme**

The Career Support Programme helps experienced Singapore Citizen PMETs, who have been unemployed or made redundant for six months or more take on new jobs paying at least \$4,000 (\$3,600 in SMEs).

Companies can receive up to \$42,000 in salary support for up to 18 months when they hire eligible PMETs who are retrenched and/or unemployed for six months or more, in jobs that pay gross monthly salary of at least \$3,600 (for SMEs)/ \$4,000 (Non-SMEs).

#### MyCareersFuture.sg

MyCareersFuture.sg is a portal which aims to provide Singaporean jobseekers with a fast and smart search service to match them with relevant jobs, based on the jobseekers' skills and competencies.

The portal enables Singaporeans to be more aware of the skills they possess, and connect them to relevant jobs based on their current skills and competencies. It also highlights jobs which are eligible for Government support through WSG's Adapt and Grow programmes.

Initiatives and Schemes by: SkillsFuture Singapore

Workforce Singapore



## Realise Your Potential -Take the Next Step Forward

Now that you have some idea of what a career in the Landscape industry can offer and the available government initiatives and schemes to support your career goals, you are ready to take the next step!



For a list of training programmes available for the landscape sector, please visit: skillsfuture.sg/skills-framework/landscape

## Landscape Career Tracks and Skills Map

### Landscape Design



Responsible for creating a landscape design plan for a given space or area. The design may include water features, vertical greenery and even extend to interior landscaping.

Page 17-30

Landscape Implementation



Construct and install specified features in a given space or area according to a design plan. The work involves project management and coordination of different work teams.

Horticulture and Turf Maintenance



Provide landscape horticulture and turf maintenance services after a project has been completed. A maintenance schedule is determined based on the needs of the client and species of plants used.

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## Landscape Career Tracks and Skills Map

### Arboriculture



Provide arboriculture services and manage trees in commercial, residential and public developments. The range of services offered may include pruning, felling, transplanting, diagnosis and treatment of tree diseases.

Page 49-56

Nursery



Carry out plant propagation, and export and import a wide range of plant nursery products to cater to both local and overseas markets. Plant nurseries supply the materials required during landscape implementation and maintenance.

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## Landscape Design

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### **Managing Director**

Terrence Fernando ICN Design International Pte Ltd

### **DESIGNING FOR THE FUTURE**

As Managing Director of ICN Design International, Terrence constantly works to ensure the overall success of landscape design projects and quality servicing of clients. These include handling bids and tender interviews, client presentations and job progress reports. He is also deeply involved in horticulture design and landscape drawings, spending at least a third of his time visiting job sites to ensure that contractors comply with design specifications, and resolving critical operational and design obstacles.

Even with nearly four decades of experience under his belt, work is a constant learning experience for Terrence. Each project requires detailed planning and customisations arising from varying environmental conditions, plant types and infrastructure. He shares, "Landscape architecture involves knowledge spanning a wide range of fields from botany and soil sciences to construction and engineering. We have a symbiotic relationship with many disciplines."

Land scarcity and constraints are among the main challenges that Terrence faces in his work in Singapore. He says, "As there are less expanses of land to work with, many of the projects which we take on are part of sky rise projects in buildings and rooftops." As a result, Terrence has to ensure that the plants and landscaping designs can withstand weather elements at elevated conditions, such as strong winds.

"We create experiences," Terrence asserts. "Sustainable landscape design requires deep skills in master planning so that the design will withstand environmental challenges, and benefit the developments, their users and society for generations to come." Shaping his design ethos is a commitment to long-term sustainability: "Designing for living means designing for how the future will be. The more buildings there are, the less there is for ground level planting. This ultimately translates to hotter living environments, when a single big tree would provide far greater cooling effects on a city, than a sky garden." Terrence appreciates that the Skills Framework for Landscape recognises this and other evolving trends and has captured them along with accompanying skills.

Terrence's goal is to raise the profile of Singapore design on the world stage, and influence the future of landscaping through advisory and teaching roles. He feels that the Skills Framework for Landscape will be a good resource for him to influence and shape the minds of the young entrants he hopes to groom, as it highlights information about the sector, as well as the emerging trends and skills. He also believes that the framework can help landscape design practitioners identify skill gaps, such as in the use of 3D design applications, and act as a good career developmental tool for individuals to chart their training roadmap to address skill gaps.

The Skills Framework would be a good career developmental tool for individuals to chart their training roadmap to address skill gaps.

### Landscape Designer

### **JOB ROLE DESCRIPTION**

The Landscape Designer contributes to all phases of landscape design projects from pitching for new projects to implementing the landscape design. He/She conducts research for new landscape design ideas, tests the feasibility to implement new design and communicates the design potential to various stakeholders. He coordinates with a diverse group of internal and external stakeholders to develop design plans, concepts and prototypes in order to ensure final landscape design meets the clients' needs.

He also supports the selection of suitable landscape contractors, coordinates and tracks the progress of the landscape implementation in accordance with the design plans. He works as part of a team in a collaborative environment to deliver landscape design projects. His time is divided between research, design and oversight of project implementation.

He keeps a keen interest in the latest landscape design trends, possesses a mastery of design fundamentals and technical skills, and continually seeks to explore new landscape design boundaries. He is able to work on multiple projects concurrently and delivers on expectations within the given project timelines and allocated budgets.

	CRITICAL WORK FUNCTIONS	KEYTASKS
		<ul> <li>Provide landscape design-related inputs to support the development of marketing collaterals for business development</li> </ul>
	Execute business development	• Provide cost and resources estimates to support the development of technical and commercial proposals to pitch for landscape design contracts
	Execute business development	• Develop site assessment reports to support the development of technical proposals
		• Support the evaluation of tender or contract requirements to determine the scope of work
		<ul> <li>Review the brief provided by the clients to support the establishment of design objectives</li> </ul>
	Establish design objectives and concepts	<ul> <li>Conduct detailed site assessments to ascertain factors that could impact landscape designs</li> </ul>
CRITICAL WORK FUNCTIONS AND KEY TASKS		<ul> <li>Coordinate with clients and other key project stakeholders on project requirements and considerations</li> </ul>
		<ul> <li>Conduct research to generate ideas for the design concepts and landscape designs</li> </ul>
		<ul> <li>Consolidate research findings into research reports for circulation to internal stakeholders</li> </ul>
		• Administer experiments for testing feasibility of new landscape design ideas or concepts
		<ul> <li>Provide assistance and feedback to junior team members to meet design project objectives and quality standards</li> </ul>
	Deliver design outputs	• Develop designs through the use of drafting techniques and digital design tools as per requirements and design concepts
		<ul> <li>Identify softscape and hardscape palette in alignment with the design concepts</li> </ul>
		<ul> <li>Identify existing vegetation or habitats to be protected</li> </ul>
		• Consolidate and report feedback from clients and key stakeholders for the refinement of designs

### Landscape Designer

	CRITICAL WORK FUNCTIONS	KEY TASKS
		<ul> <li>Provide information to support the project management team in the costing of resources required for the implementation of landscape designs</li> </ul>
		<ul> <li>Work with building architects on complying with statutory requirements and guidelines for landscape elements</li> </ul>
		<ul> <li>Coordinate with landscape specialists, contractors and relevant consultants to work out other project specifications</li> </ul>
		<ul> <li>Support the review and shortlisting processes for landscape tenders</li> </ul>
	Manage landscape design project	<ul> <li>Review the contractors' plans, drawings and actual work to track project progress and/or variations and recommend the associated payment terms</li> </ul>
		<ul> <li>Coordinate with various stakeholders to determine project scope variations and associated implementation requirement and risks</li> </ul>
		<ul> <li>Review payment claims submitted by contractors against progress on established milestones</li> </ul>
		<ul> <li>Track projects against established schedules, budget, manpower and technical quality targets to report issues associated with project implementation to the management team</li> </ul>
		<ul> <li>Review the maintenance and progress of defect rectifications and maintenance obligations of the contractors</li> </ul>

#### TECHNICAL SKILLS AND COMPETENCIES

Aesthetic and Design Sensibility	Level 3, Level 4	Ecology in Landscapes	Level 4
Biophilic Design	Level 4	Form Giving	Level 3, Level 4
Building Information Modelling Application	Level 3	Imagination and Exploration	Level 3
Business Development	Level 3	Innovation Management	Level 3
Conceptual Thinking	Level 3	Material Studies and Production Processes	Level 3
Contract Preparation, Evaluation, Negotiation and Tendering	Level 4	Plant Identification	Level 3
Critical Thinking	Level 3	Plant Selection for Landscape Development	Level 3
Cultural, Heritage and Socio-economic Sensitivity for Design	Level 3, Level 4	Project Management	Level 3, Level 4
Data Analysis and Interpretation	Level 2	Site Assessment and Analysis	Level 3
Design Creation and Development	Level 3, Level 4	Skyrise Greenery Design and Implementation	Level 4
Design Sketching	Level 3, Level 4	Stakeholder Management	Level 3
Design Standards and Specification	Level 3, Level 4	Sustainable Landscape Design	Level 3
Design Thinking Practice	Level 3	Technical Drawing	Level 3
Digital and Physical Prototyping	Level 3, Level 4	Visual Communication	Level 3

GENERIC SKILLS AND COMPETENCIES (TOP 5)			
Communication	Intermediate	Digital Literacy	Intermediate
Teamwork	Advanced	Computational Thinking	Basic
Creative Thinking	Advanced		

For a list of Training Programmes available for the Landscape sector, please visit: **www.skillsfuture.sg/skills-framework/landscape** 

### **Principal Landscape Designer**

### **JOB ROLE DESCRIPTION**

The Principal Landscape Designer is involved in business development, manages landscape design projects and supports organisational functions. He/She executes business development to expand the organisation's landscape design specialities and cultivates business relationships both locally and internationally to help the organisation grow. He provides design directions for project teams, conceptualises new and innovative landscape design ideas to profile the organisation's capabilities. He maintains close oversight of project implementation and ensures the quality design are delivered to meet the organisation's and clients' objectives. He also provides coaching to internal team members, drives people development initiatives and manages the day-to-day functions of the department.

He thrives in a creative environment and is an effective communicator who can influence others with his ideas and concepts. He has excellent leadership qualities and is able to guide teams, departments and/or the organisation. He is proficient in planning, organising and managing projects. He also possesses strong analytical skills to identify favourable unique opportunities to create value for the organisation. In addition, he has deep landscape industry knowledge to anticipate new industry trends and market factors that may impact the offerings of the organisation.

	CRITICAL WORK FUNCTIONS	KEYTASKS
	Execute business development	• Collaborate with the management team in the development of marketing collaterals for business development
		<ul> <li>Participate in tender interviews, pitch meetings and/or marketing presentations to potential clients, building architects and contractors to showcase technical capabilities and experience</li> </ul>
		• Evaluate cost and resources estimates to develop technical and commercial proposals
		• Review site assessment reports to provide recommendations for technical proposals
		• Develop technical and commercial proposals to pitch for landscape design contracts
		• Lead the execution of strategies aimed at internationalisation of the business
	Establish design objectives and concepts	<ul> <li>Establish requirements and design objectives based on information that influences the development or management of the projects</li> </ul>
CRITICAL WORK FUNCTIONS AND		<ul> <li>Study site characteristics and conditions to evaluate the strengths, weaknesses, constraints and opportunities related to subject development sites</li> </ul>
KEY TASKS		<ul> <li>Collaborate with clients and other key project stakeholders to clarify the landscape design objectives, budgets and roles of all stakeholders</li> </ul>
		• Secure necessary support and resources for research and development
		<ul> <li>Enhance the feasibility of new design ideas through market research and testing</li> </ul>
		Obtain clients' approvals for the overall design concepts
		• Establish design project schedules and standards of quality for project deliverables
	Deliver design outputs	• Allocate work to the design team based on specialisation or experience
		• Approve overall design illustrations and present completed landscape design outputs to clients and other stakeholders
		• Review softscape and hardscape selection ideas for suitability to the design concepts
		• Evaluate overall effectiveness and technical and commercial viability of landscape designs to provide feedback for enhancement to the design team
		• Collaborate with project quantity surveyor on the provision of cost estimates for the implementation of the designs based on clients' inputs

## Principal Landscape Designer

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage landscape design project	<ul> <li>Articulate importance and the impact of statutory requirements and the submission guidelines for landscape-related matters to stakeholders</li> </ul>
		• Collaborate with landscape specialists, contractors and relevant consultants on scope of project, design concepts, site challenges, key expectations and the hiring of specialised expertise if required
		<ul> <li>Evaluate proposals submitted by landscape contractors to make recommendations to clients for award of projects</li> </ul>
		• Approve variance to tender specifications for adherence to overall approved design intent
CRITICAL WORK		• Sign off on the achievement of established milestones to approve payments to contractors
FUNCTIONS AND KEY TASKS		• Approve implementation timelines, scope changes, resources and manpower deployment in consideration of project objectives
		• Evaluate progress of landscape implementation project through site visits, management meetings and reports submitted and resolve issues associated with project implementation in collaboration with stakeholders
		• Certify completion of defects rectification prior to and immediately after the certification of completed contract works
		Communicate common goals, direction and accountability among staff
	Manage organisational development	<ul> <li>Develop staff through capability development and coaching</li> </ul>
		<ul> <li>Implement effective performance management practices within department in accordance with company policies and procedures</li> </ul>
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>

TECHNICAL SKILLS AND COMPETENCIES	
Aesthetic and Design Sensibility	Level 5
Biophilic Design	Level 5
Budgeting	Level 4
Building Information Modelling Application	Level 5
Business Development	Level 5
Conceptual Thinking	Level 5
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5
Critical Thinking	Level 5
Cultural, Heritage and Socio-economic Sensitivity for Design	Level 5
Data Analysis and Interpretation	Level 4
Design Creation and Development	Level 5
Design Sketching	Level 5
Design Standards and Specification	Level 5
Design Thinking Practice	Level 5
Digital and Physical Prototyping	Level 5
Ecology in Landscapes	Level 5
Form Giving	Level 5

Imagination and Exploration	Level 5
Innovation Management	Level 4
Learning and Development	Level 4
Material Studies and Production Processes	Level 5
Plant Selection for Landscape Development	Level 5
Plant Identification	Level 4
Project Management	Level 5
Site Assessment and Analysis	Level 4
Skyrise Greenery Design and Implementation	Level 5
Stakeholder Management	Level 5
Strategy Planning	Level 4
Sustainable Landscape Design	Level 5
Technical Drawing	Level 5
Vendor Management	Level 4
Visual Communication	Level 5
Workflow Digitalisation	Level 4

GENERIC SKILLS AND COMPETENCIES (TOP 5)			
Leadership	Advanced	Creative Thinking	Advanced
Decision Making	Advanced	Teamwork	Advanced
Communication	Advanced		

### Landscape Architect

### **JOB ROLE DESCRIPTION**

The Landscape Architect manages and contributes to the end-to-end landscape design process from a multidisciplinary perspective. He/She collaborates with a diverse group of internal and external stakeholders to bring together knowledge of various inter-related disciplines into a cohesive landscape design and architectural plans. He also develops concepts and prototypes as part of his work to pitch for landscape design and architectural projects as well as to deliver the final landscape design to meet clients' needs. He conducts site visits to study and research on project requirement, checks on progress during project implementation, monitors compliance with design plans, and manages design variations.

He is a strong team player and is ready to be called upon to lead the project team towards successful delivery landscape design and architecture projects. He spends his time overseeing project implementation, is able to work on multiple projects concurrently and delivers on expectation within a given project timeline and allocated budget.

He possesses a strong mastery of design and landscape architecture fundamentals and technical skills to deliver creative works that meet projects and stakeholders' requirement. He kept himself abreast of the latest landscape industry design and architectural trends and regulatory requirements, and seeks to continually upgrade his knowledge and skills in different aspect of the landscape industry.

	CRITICAL WORK FUNCTIONS	KEYTASKS
	Execute business development	<ul> <li>Provide landscape design-related inputs to support the development of marketing collaterals for business development</li> </ul>
		• Provide cost and resource estimates to support the development of technical and commercial proposals for landscape design contracts
		• Develop site assessment reports to support the development of technical proposals
		• Participate in client presentations to pitch for landscape design contracts
		• Support the evaluation of tender or contract requirements to determine the scope of work
CRITICAL WORK FUNCTIONS AND KEY TASKS		<ul> <li>Review the brief provided by the clients to support the establishment of design objectives</li> </ul>
		<ul> <li>Analyse existing site conditions that could influence the design and arrangement of landscape features</li> </ul>
		<ul> <li>Coordinate with clients and other key project stakeholders on project requirements and considerations</li> </ul>
	Establish design objectives	• Analyse research findings to inform decisions on landscape design concepts
	and concepts	<ul> <li>Communicate research findings to stakeholders for informed decision making on landscape designs</li> </ul>
		<ul> <li>Analyse results of feasibility tests for landscape designs through reviews with the design team</li> </ul>
		• Develop and propose visual concepts for landscape designs and development to showcase broad landscape designs, layout of key features and relationship with built elements

## Landscape Architect

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Deliver design outputs	<ul> <li>Provide assistance and feedback to junior team members to meet design objectives and standards of quality</li> </ul>
		• Develop cohesive design plans in alignment with the overall design concept in collaboration with stakeholders
		• Prepare illustrative drawings to demonstrate the design concepts for the hardscape, softscape and special features
		• Develop technical drawings, schedules and specifications of materials and landscape grading indicating layouts, dimensions and profiles, providing accompanying notes for workmanship where required
		<ul> <li>Identify existing vegetation or habitats to be protected</li> </ul>
		<ul> <li>Provide in progress coordination drawings to clients and all relevant consultants for their inputs and coordination</li> </ul>
		Incorporate feedback from clients and all relevant consultants
CRITICAL WORK FUNCTIONS		<ul> <li>Write bill of quantities and performance specifications for resources required in the implementation of landscape designs for costing of the project requirements</li> </ul>
AND KEY TASKS		<ul> <li>Collaborate with building architects on managing compliance with statutory requirements for landscape elements</li> </ul>
		<ul> <li>Review with the Qualified Person (QP) on landscape-related matters that are required for the respective authorities and provide separate quotes if other environmental certification schemes are required in the projects</li> </ul>
	Manage landscape design	<ul> <li>Coordinate with landscape specialists, contractors and relevant consultants to work out site planning specifications and issues in the projects</li> </ul>
	project	<ul> <li>Advise the clients on tender related requirements for the appointment of landscape contractors</li> </ul>
		<ul> <li>Review the contractors' plans, drawings and actual work to track project progress and/or variations and recommend the associated payment terms</li> </ul>
		<ul> <li>Coordinate with various stakeholders to determine project scope variations and associated implementation requirement and risks</li> </ul>
		<ul> <li>Provide inspection reports to stakeholders by participating in site visits to check on progress and monitor compliance with design plans</li> </ul>
		<ul> <li>Review the maintenance and progress of defect rectifications and maintenance obligations of the contractors</li> </ul>

### Landscape Architect

TECHNICAL SKILLS AND COMPETENCIES			
Aesthetic and Design Sensibility	Level 4	Imagination and Exploration	Level 4
Biophilic Design	Level 4	Innovation Management	Level 3
Building Information Modelling Application	Level 4	Material Studies and Production Processes	Level 4
Business Development	Level 4	Microclimate in Landscape Design	Level 4
Conceptual Thinking	Level 4	Placemaking and Programming of Open Spaces	Level 4
Contract Preparation, Evaluation, Negotiation and Tendering	Level 4	Plant Identification	Level 3
Critical Thinking	Level 4	Plant Selection for Landscape Development	Level 4
Cultural, Heritage and Socio-economic Sensitivity for Design	Level 4	Project Management	Level 4
Data Analysis and Interpretation	Level 3	Site Assessment and Analysis	Level 4
Design Creation and Development	Level 4	Skyrise Greenery Design and Implementation	Level 4
Design Sketching	Level 4	Stakeholder Management	Level 4
Design Standards and Specification	Level 4	Sustainable Landscape Design	Level 4
Design Thinking Practice	Level 4	Technical Drawing	Level 4
Digital and Physical Prototyping	Level 4	Visual Communication	Level 4
Ecology in Landscapes	Level 4	Water Sensitive Urban Design	Level 4
Form Giving	Level 4		

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Creative Thinking	Advanced	Problem Solving	Intermediate	
Communication	Intermediate	Transdisciplinary Thinking	Intermediate	
Teamwork	Intermediate			

### **Principal Landscape Architect**

### **JOB ROLE DESCRIPTION**

The Principal Landscape Architect is involved in establishing business leads, managing landscape development and design projects, and supporting organisational functions. He/She employs a multidisciplinary approach towards landscape development, planning and design projects by integrating inputs from various technical and functional disciplines to develop cohesive landscape design and architecture solutions to meet clients' needs. He executes business development, expands the organisation's landscape design and architectural specialities and cultivates business relationships both locally and internationally. He provides design directions for project teams and conceptualises new and innovative landscape design and architectural ideas to profile the organisation's capabilities. He oversees project development and implementation, ensuring the organisation's and clients' goals and objectives are met. He also coaches internal team members, drives people development initiatives and manages the day-to-day functions.

He thrives in the specialised field of landscape architecture, is creative and communicates effectively to align others with his creative visions. He has excellent leadership qualities and is able to guide teams, departments and/or the organisation. He is proficient in planning, organising and managing projects. He also possesses strong analytical skills to identify favourable unique opportunities to create value for the organisation. In addition, he continually seeks to develop his business acumen, deepen his landscape industry knowledge, anticipate new industry trends and market factors to excel in his creative services.

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Execute business development	• Collaborate with the management team in the development of marketing collaterals for business development
		<ul> <li>Participate in tender interviews, pitch meetings and/or marketing presentations to potential clients, building architects and contractors to showcase technical capabilities and experience</li> </ul>
		• Evaluate cost and resource estimates to develop technical and commercial proposals
		• Review site assessment reports to provide recommendations for technical proposals
		• Develop technical and commercial proposals to pitch for landscape design contracts
		• Lead the execution of strategies aimed at internationalisation of the business
CRITICAL WORK FUNCTIONS AND KEY TASKS		<ul> <li>Assess site layouts and proposed development plans to identify and resolve issues pertaining to land uses, landforms, water bodies and planting</li> </ul>
		<ul> <li>Define the multidisciplinary approach, including specialised services, to be taken for the planning and design of the proposed landscape development</li> </ul>
		<ul> <li>Lead the impact evaluation of proposed development plans on the environment and communities in the area as well as the evaluation of corresponding mitigation measures</li> </ul>
	Establish design objectives	<ul> <li>Establish requirements and design objectives based on information that influences the development or management of the projects</li> </ul>
	and concepts	<ul> <li>Oversee adherence to design concepts for design outputs across various specialisations and disciplines</li> </ul>
		<ul> <li>Collaborate with clients and other key project stakeholders to clarify the landscape design objectives, budgets and roles of all stakeholders</li> </ul>
		• Secure necessary support and resources for research and development
		<ul> <li>Enhance the feasibility of new design ideas through market research and testing</li> </ul>
		• Obtain clients' approvals for the overall design concepts

## **Principal Landscape Architect**

	CRITICAL WORK FUNCTIONS	KEY TASKS
		• Establish design project schedules and standards of quality for project deliverables
		• Allocate work to the design team based on specialisation or experience
	Deliver design outputs	• Approve overall design illustrations and present completed landscape design outputs to clients and other stakeholders
		• Review softscape and hardscape selection ideas for suitability to the design concepts
		• Oversee adherence to the protection of existing vegetation or habitat in the implementation of landscape designs and plans
		• Evaluate overall effectiveness and technical and commercial viability of landscape designs to provide feedback for enhancement to the design team
		• Collaborate with project quantity surveyors on the provision of cost estimates for the implementation of the designs based on clients' inputs
	Manage landscape design project	<ul> <li>Articulate importance and the impact of statutory requirements and the submission guidelines for landscape-related matters to stakeholders</li> </ul>
CRITICAL WORK FUNCTIONS		<ul> <li>Collaborate with landscape specialists, contractors and relevant consultants on scope of project, design concepts, site challenges, key expectations and the hiring of specialised expertise if required</li> </ul>
AND KEY TASKS		<ul> <li>Evaluate proposals submitted by landscape contractors to make recommendations to clients for award of projects</li> </ul>
		<ul> <li>Approve variances to tender specifications for adherence to overall approved design intent</li> </ul>
		<ul> <li>Sign off on the achievement of established milestones to approve payments to contractors</li> </ul>
		<ul> <li>Approve implementation timelines, scope changes, resources and manpower deployment in consideration of project objectives</li> </ul>
		<ul> <li>Evaluate progress of landscape implementation projects through site visits, management meetings and reports submitted and resolve issues associated with project implementation in collaboration with stakeholders</li> </ul>
		<ul> <li>Certify completion of defect rectifications prior to and immediately after the certification of completed contract works</li> </ul>
		Communicate common goals, direction and accountability among staff
		Develop staff through capability development and coaching
	Manage organisational development	• Implement effective performance management practices within department in accordance with company policies and procedures
		• Monitor budgets, forecasting, work allocations and staffing of the various departments

### **Principal Landscape Architect**

TECHNICAL SKILLS AND COMPETENCIES			
Aesthetic and Design Sensibility	Level 5	Innovation Management	Level 4
Biophilic Design	Level 5	Learning and Development	Level 4
Budgeting	Level 4	Material Studies and Production Processes	Level 5
Building Information Modelling Application	Level 5	Microclimate in Landscape Design	Level 5
Business Development	Level 5	Placemaking and Programming of Open Spaces	Level 5
Conceptual Thinking	Level 5	Plant Identification	Level 4
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5	Plant Selection for Landscape Development	Level 5
Critical Thinking	Level 5	Project Management	Level 5
Cultural, Heritage and Socio-economic Sensitivity for Design	Level 5	Site Assessment and Analysis	Level 5
Data Analysis and Interpretation	Level 4	Skyrise Greenery Design and Implementation	Level 5
Design Creation and Development	Level 5	Stakeholder Management	Level 5
Design Sketching	Level 5	Strategy Planning	Level 4
Design Standards and Specification	Level 5	Sustainable Landscape Design	Level 5
Design Thinking Practice	Level 5	Technical Drawing	Level 5
Digital and Physical Prototyping	Level 5	Vendor Management	Level 4
Ecology in Landscapes	Level 5	Visual Communication	Level 5
Form Giving	Level 5	Water Sensitive Urban Design	Level 5
Imagination and Exploration	Level 5	Workflow Digitalisation	Level 4

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Interpersonal Skills	Advanced	Resource Management	Advanced	
Developing People	Advanced	Decision Making	Advanced	
Leadership	Advanced			




## Landscape Implementation

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### Landscape Project Coordinator

Jarren Teo Ho Eng Huat Construction Pte Ltd

### **COORDINATING TECHNOLOGY AND PEOPLE**

Jarren feels that his role as a landscape project coordinator offers him a good balance between working with plants and people, in work environments that are more often than not, calm and peaceful. "My job is especially meaningful because the maintenance of our natural environment is key to preserving our surroundings and climate control, which can impact health and living conditions." he shares.

When managing the day-to-day operations of his company's park maintenance contracts, Jarren has to factor in considerations such as timeline, weather, and the resources available, be it equipment or manpower. He has been in his role for five years now, having started off as an office administrator where he was exposed to various work flows that honed his coordination skills. Jarren's interest in landscaping led him to take up various landscape courses covering equipment operations as well as the WSQ Advanced Certificate in Landscape Supervision, which enabled him to be more proficient in plant and soil identification and management, as well as in project execution and budgeting.

Not one to rest on his laurels, he is now pursuing the WSQ Diploma in Landscape Management to acquire skills in managing complex projects and better utilising of resources. Jarren aspires to become a residential landscape coordinator and horticulturist. He believes that this will complement and strengthen his existing landscape technical capabilities, and help him to explore the use of technology and innovation to reinvent landscaping work in his company.

"A lot of people have the misconception that this industry is all about hands-on manual labour. In reality, there is increasing use of technology in landscaping. With my first-hand experience in landscape operations, I will be able to plan my resources, utilise technologies such as remote controlled grass cutters and chainsaws, and prepare my workers with relevant skills to perform their work. The Skills Framework for Landscape has also highlighted the emergence of automation in the industry. There is a lot of machinery being introduced increasingly, hence it is important to stay equipped with the necessary skills to stay competitive."

The Skills Framework for Landscape has also highlighted the emergence of automation in the industry. There is a lot of machinery being introduced increasingly, hence it is important to stay equipped with the necessary skills to stay competitive.

### Landscape Project Coordinator

### **JOB ROLE DESCRIPTION**

The Landscape Project Coordinator is responsible for coordinating the implementation of softscape and hardscape in landscape projects. He/She supports the scoping and planning of the projects through providing cost and material inputs. He reviews project contracts to ensure feasibility of implementation and subsequent adherence to agreed terms. He also monitors project progress through onsite monitoring as well as maintains communication with stakeholders.

His work involves significant amount of planning and coordination with various teams, stakeholders and regulatory bodies in a project environment. He is required to divide his time between the site and office to effectively deliver his responsibilities.

He is competent at communicating in order to align the expectations of all stakeholders. He also has an eye for details and is able to manage paperwork to scrutinise contracts. He should also be proficient in collaborating with others in order to solve problems that may arise. He is able to manage his time and work under resource constraints.

	CRITICAL WORK FUNCTIONS	KEY TASKS
		<ul> <li>Review contracts after award of projects to assess risks, map scope of work to tender specifications and propose exceptions or modifications as necessary</li> </ul>
		• Participate in site assessments to determine actual scope of work and challenges on sites
	Plan landscape	• Study tender specifications to assist in budget development
	implementation projects	<ul> <li>Provide feedback on exceptions to tender specifications in case of unavailability of prescribed materials</li> </ul>
		• Provide inputs to the development of the overall project plan
		• Support manpower planning with effort and cost inputs as and when required
		Identify suitable selection of materials for the projects
CRITICAL WORK FUNCTIONS AND KEY TASKS	Execute landscape implementation projects	• Study implementation drawings to interpret the flow of the implementation process
		<ul> <li>Guide staff and contractors in the interpretation of implementation drawings, markings and measurements of sites as per drawings</li> </ul>
		<ul> <li>Communicate roles, responsibilities, performance expectations and reporting norms to supervisors involved in the projects</li> </ul>
		• Brief supervisors on safety procedures for the sites
		<ul> <li>Plan and coordinate the procurement of resources to meet project requirements</li> </ul>
		<ul> <li>Track project progress through reports and dashboards to ensure adequate documentation of work done</li> </ul>
		<ul> <li>Provide status updates to the management team on work progress, resource requirements, issues and challenges in project execution</li> </ul>
		<ul> <li>Resolve manpower-related challenges and conflicts on sites</li> </ul>
	Improve performance of landscape projects	• Prepare site reports to track project progress and for management reporting
		Maintain project records of all work done in a systematic manner
		• Deploy measures to improve project performance as guided by manager

### Landscape Project Coordinator

#### TECHNICAL SKILLS AND COMPETENCIES

Automation of Landscape Operations	Level 3
Contract Preparation, Evaluation, Negotiation and Tendering	Level 4
Environment Management in Landscape Operations	Level 3
Hazards and Risk Control, and Policy Management	Level 3
Horticultural Chemical Usage	Level 3
Incident and Accident Investigation	Level 3
Landscape Drainage Management	Level 3
Landscape Tools, Equipment and Machinery Management	Level 3
Plant Identification	Level 3

Plants and Materials Procurement for Landscape Projects	Level 3
Plant Selection for Landscape Development	Level 3
Project Management	Level 3, Level 4
Site Assessment and Analysis	Level 3
Skyrise Greenery Design and Implementation	Level 3
Soil and Media Assessment and Remediation	Level 3
Stakeholder Management	Level 3
Vendor Management	Level 3
Water Features Management	Level 3

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Communication	Intermediate	Problem Solving	Intermediate	
Teamwork	Advanced	Interpersonal Skills	Intermediate	
Leadership	Intermediate			

### Landscape Project Manager

### **JOB ROLE DESCRIPTION**

The Landscape Project Manager leads the implementation of softscape and hardscape in a landscape project. He/She is responsible for the scoping, planning, resource management, initiating and execution of such projects. He is also involved in business development activities including the development of proposals for getting new contracts.

His work involves a high amount of planning and coordination to ensure successful execution of projects. He is required to balance his time between planning and reviewing progress reports in office, and monitoring actual execution on sites.

He is an efficient planner, often required to manage work within resource constraints. He is an effective communicator and proficient at problem solving as well as resolving conflicts. He is also proficient in collaboration and stakeholder management, given the number of stakeholders and regulatory bodies he engages with on a regular basis.

	CRITICAL WORK FUNCTIONS	KEY TASKS
CRITICAL WORK FUNCTIONS AND KEY TASKS       Execute business development         Plan landscape implementation projects		• Collaborate with the management team in the development of marketing collaterals for business development
		• Undertake site visits to understand onsite challenges that would impact the scope of work or achievement of contract criteria
		• Develop cost and effort estimates to create technical and commercial proposals to bid for tendered contracts
		• Evaluate the technical and commercial feasibility of the scope of work with respect to the organisation's technical capability and commercial considerations
	<ul> <li>Participate in tender interviews, pitch meetings and/or marketing presentations to potential clients, building architects and building contractors to showcase technical capability and experience</li> </ul>	
		<ul> <li>Attend client briefings to clarify project scope and establish expectations, communication channels and related protocols</li> </ul>
		<ul> <li>Conduct detailed site assessments to understand complete scope of implementation work, site challenges, technical issues and business, design and safety risks</li> </ul>
		<ul> <li>Review landscape designs to understand feasibility and propose exceptions based on practical implementation considerations to the clients and the designers</li> </ul>
		<ul> <li>Develop the overall project plan, the compliance and technical requirements, protocols, standard operating procedures and processes for the implementation of landscape designs</li> </ul>
		<ul> <li>Create periodic budgets in accordance with overall project budget and tender specifications to be met</li> </ul>
		<ul> <li>Plan the requirements for manpower, materials, tools and equipment as well as site supervision</li> </ul>
		<ul> <li>Identify vendors for plant and material procurements, and sub-contractors for parts of work for which internal capability may not be available</li> </ul>
		Define roles, responsibilities and expectations for all onsite staff

## Landscape Project Manager

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Execute landscape	• Coordinate the development of implementation drawings from landscape designs
		• Establish implementation processes for softscape and hardscape based on method of statement, drawings and project plans
		<ul> <li>Assess the risks associated with landscape implementation on site to establish safety procedures and protocols</li> </ul>
		• Drive adherence to industry standards, legislation and guidelines relating to workplace safety and health (WSH) regulations and usage of personal protective equipment (PPE) for landscape implementation projects
	implementation projects	<ul> <li>Establish reporting norms to be used by supervisors to report on site progress and issues</li> </ul>
		• Conduct site visits to take feedback from supervisors and coordinators and review project progress and adherence to designs and plans
		<ul> <li>Update clients, designers, principal contractors and other project stakeholders on progress of landscape implementation</li> </ul>
CRITICAL WORK FUNCTIONS AND		<ul> <li>Advise on technical issues pertaining to softscape and hardscape implementation</li> </ul>
KEY TASKS	Improve performance of landscape projects	<ul> <li>Review schedule-based performance of all allocated sites through site reports to evaluate overall project performance</li> </ul>
		<ul> <li>Evaluate schedule-based performance of allocated sites against key established metrics</li> </ul>
		<ul> <li>Analyse reports of previous work done to avoid mistakes and improve performance</li> </ul>
		• Deploy measures to mitigate key anticipated challenges in reaching expected project performance levels
		<ul> <li>Develop measures to improve performance in terms of quality, productivity, timeline and cost of maintenance</li> </ul>
		Communicate common goals, direction and accountability among staff
		• Develop staff through capability development and coaching
	Influence organisational development	• Implement effective performance management practices within department in accordance with company policies and procedures
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>

## Landscape Project Manager

#### TECHNICAL SKILLS AND COMPETENCIES

Automation of Landscape Operations	Level 4
Budgeting	Level 3
Business Development	Level 4
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5
Environment Management in Landscape Operations	Level 4
Hazards and Risk Control, and Policy Management	Level 4
Horticultural Chemical Usage	Level 4
Incident and Accident Investigation	Level 4
Innovation Management	Level 4
Landscape Drainage Management	Level 4
Landscape Tools, Equipment and Machinery Management	Level 4
Learning and Development	Level 4
Plant Identification	Level 4

Plants and Materials Procurement for Landscape Projects	Level 4
Plant Selection for Landscape Development	Level 4
Project Management	Level 5
Site Assessment and Analysis	Level 4
Skyrise Greenery Design and Implementation	Level 4
Soil and Media Assessment and Remediation	Level 4
Stakeholder Management	Level 4
Strategy Planning	Level 4
Vendor Management	Level 4
Water Features Management	Level 4
Workflow Digitalisation	Level 4
Workplace Safety and Health Policy Development	Level 4, Level 5

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Leadership	Advanced	Communication	Advanced	
Problem Solving	Advanced	Interpersonal Skills	Advanced	
Decision Making	Advanced			




## Horticulture and Turf Maintenance

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#### Landscape Manager

Sidek bin Kitan Envirocare Landscape (S) Pte Ltd

#### A TRULY MEANINGFUL CAREER

No challenge is insurmountable for the "can-do" spirit of Sidek, who is a Landscape Operations Manager for Envirocare Landscape. Sidek has been in this role for three years now, having made a mid-career switch to landscaping after 15 years as a Health and Fitness Educator.

Attracted to the outdoor nature of this industry, Sidek leads a team of residential and commercial building landscape maintenance professionals. He is in charge of work delegation, as well as meeting his organisation's operational goals and requirements. As the touchpoint between clients and his co-workers, Sidek has to be a proficient communicator, drawing on peoplemanagement and listening skills which he honed in his previous profession.

A firm proponent of lifelong learning, Sidek first joined the industry under the Landscape Apprenticeship Programme. In the last three years, he has also attended numerous Landscape Singapore Workforce Skills Qualifications (WSQ) courses, and credits his bosses' strong commitment in supporting his growth. What Sidek values most about his current career, is his newfound deep appreciation of the values that plants and nature bring. "I think people don't often realise the impact of landscaping and nature in their daily lives plants and trees are our main providers of fresh air, and are instrumental in balancing our world's health."

One of Sidek's proudest moments is saving a small private garden from chemical weeding and restoring it. He shares, "It's not a fashionable industry like Information and Communications Technology or Financial Technology, but I've grown a lot in terms of skills. I get most satisfaction when I can save a dying plant or tree. I value their lives as much as any other life form, and hope to do my part in protecting nature for my children."

Beyond his current role managing landscaping operations, Sidek plans to become a Certified Arborist in the future. He says, "The Skills Framework for Landscape serves as an important resource for me to plan my skills development and identify and research training opportunities to tap on. The arboriculture track is a strong enabler in helping me to attain my career goal."

The Skills Framework for Landscape serves as an important resource for me to plan my skills development and identify and research training opportunities to tap on. The arboriculture track is a strong enabler in helping me to attain my career goal.

## Landscape Worker

#### **JOB ROLE DESCRIPTION**

The Landscape Worker performs tasks to support and execute horticulture, turf and general landscape work in accordance with instructions and under supervision. He/She is responsible for maintenance tasks such as watering, fertilising, weeding, soil aeration, plant pruning, grass and/or turf cutting and maintenance, clearing of horticultural waste and plant pest and disease control for allocated portions of landscape sites. He is also involved in performing routine maintenance of tools and equipment.

Landscape Worker in the Arboriculture track is involved in arboriculture work which includes performing tasks for tree planting, maintenance, basic chainsaw operations and other arboriculture tasks.

Landscape Worker in the Nursery track is involved in plant propagation and production activities as well as assisting in the set-up of nursery displays and maintenance of the nursery.

He performs mainly manual work but may use simple tools and equipment and automation technology. The work is primarily expected to be performed outdoors and requires compliance to safety procedures and protocols given the hazards involved.

He should be task-oriented and comfortable in strict adherence to processes and procedures and workplace safety and health regulations. He should be able to collaborate with other team members to complete allocated work.

	CRITICAL WORK FUNCTIONS	KEYTASKS		
	Execute landscape maintenance Manage safety of landscape operations	<ul> <li>Prepare work site areas for maintenance by segregation</li> <li>Assist in the preparation of tools required for landscape maintenance</li> <li>Perform basic landscape maintenance tasks</li> <li>Assist in application of chemicals and other substances required for plant maintenance under supervision</li> <li>Report maintenance challenges to technicians and supervisors</li> <li>Adhere to applicable workplace safety and health (WSH) regulations and usage of personal protective equipment (PPE)</li> <li>Perform safety and functionality visual checks on tools and equipment before use</li> <li>Report tools and equipment to be replaced due to performance or safety considerations</li> </ul>		
		• Perform maintenance of simple tools and equipment under supervision		
CRITICAL WORK FUNCTIONS AND	FOR ARBORICULTURE TRACK ONLY			
KEY TASKS	Execute arboriculture	Adhere to applicable workplace safety and health (WSH) regulations		
	Execute arboriculture	and usage of personal protective equipment (PPE) in performing tree maintenance		
	Execute arboriculture operations			
		maintenance		
		<ul><li>Maintenance</li><li>Assist in tree pruning and felling operations under supervision</li></ul>		
		<ul> <li>Maintenance</li> <li>Assist in tree pruning and felling operations under supervision</li> <li>Install support structures under supervision to ensure tree stability</li> </ul>		
	operations	<ul> <li>maintenance</li> <li>Assist in tree pruning and felling operations under supervision</li> <li>Install support structures under supervision to ensure tree stability</li> <li>Plant and transplant trees at the allocated areas under supervision</li> <li>Prepare soil mix or media and containers or beds for plant propagation</li> </ul>		
	operations	maintenance • Assist in tree pruning and felling operations under supervision • Install support structures under supervision to ensure tree stability • Plant and transplant trees at the allocated areas under supervision		
	operations	<ul> <li>maintenance</li> <li>Assist in tree pruning and felling operations under supervision</li> <li>Install support structures under supervision to ensure tree stability</li> <li>Plant and transplant trees at the allocated areas under supervision</li> <li>Prepare soil mix or media and containers or beds for plant propagation</li> <li>Perform planting and propagation tasks based on nursery requirements</li> </ul>		
	operations FOR NURSERY TRACK ONLY Execute nursery production	<ul> <li>maintenance</li> <li>Assist in tree pruning and felling operations under supervision</li> <li>Install support structures under supervision to ensure tree stability</li> <li>Plant and transplant trees at the allocated areas under supervision</li> <li>Prepare soil mix or media and containers or beds for plant propagation</li> <li>Perform planting and propagation tasks based on nursery requirements</li> <li>Apply nutrients to support initiation of plant propagation</li> <li>Assist in setting up automated irrigation systems to meet plant propagation</li> </ul>		

## Landscape Worker

TECHNICAL SKILLS AND COMPETENCIES			
Chainsaw Operations*	Level 1	Plant Pruning	Level 1
Display Creation and Management**	Level 1	Skyrise Greenery Maintenance	Level 1
Environment Management in Landscape Operations	Level 2	Soil and Media Assessment and Remediation	Level 1
Horticultural Chemical Usage	Level 1	Tree Climbing and Aerial Rescues*	Level 1
Landscape Drainage Management	Level 1	Tree Pruning*	Level ´
Landscape Irrigation Management	Level 1	Tree Removal*	Level 1
Landscape Tools, Equipment and Machinery Management	Level 1	Turf Maintenance	Level 1
Plant Health Management and Disease Control	Level 1	Vegetation Planting	Level ´
Plant Identification	Level 1	Work at Heights	Level ´
Plant Propagation and Production**	Level 1		

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Communication	Basic	Lifelong Learning	Basic	
Teamwork	Basic	Problem Solving	Basic	
Interpersonal Skills	Basic			

NOTE: \* Skills required for Arboriculture specialisation only NOTE: \*\* Skills required for Nursery specialisation only

For a list of Training Programmes available for the Landscape sector, please visit: **www.skillsfuture.sg/skills-framework/landscape** 

## Landscape Technician

#### **JOB ROLE DESCRIPTION**

The Landscape Technician executes technical processes involved in landscape maintenance. He/She performs maintenance tasks using chemicals, tools and equipment, for the purpose of hardscape and softscape maintenance. He identifies challenges that he may face during the performance of his tasks and reports them to supervisors. He also performs routine maintenance of tools and equipment.

He executes allocated landscape maintenance tasks independently under prescribed guidelines and workplace safety and health regulations. The work involves high amount of manual work as well as the use of significant amount of mechanisation and automation. The work is primarily expected to be performed outdoors on landscape site.

He should be task oriented and comfortable in strict adherence to processes and procedures. He should also have an eye for analysing tasks and looking for ways to improving processes.

	CRITICAL WORK FUNCTIONS	KEYTASKS
CRITICAL WORK FUNCTIONS AND KEY TASKS	Execute landscape maintenance	<ul> <li>Prepare work site area for maintenance by segregation as instructed</li> <li>Prepare tools required for landscape maintenance by inspection using checklists for safety and functionality</li> <li>Perform landscape maintenance tasks with the aid of mechanisation</li> <li>Execute the administration of chemicals and other substances for plant maintenance</li> <li>Identify and report maintenance challenges to supervisors</li> </ul>
	Manage safety of landscape operations	<ul> <li>Adhere to applicable workplace safety and health (WSH) regulations and usage of personal protective equipment (PPE)</li> <li>Follow maintenance checklists for safety and functionality checks and maintenance of tools and equipment</li> <li>Recommend the disposal and replacement of tools and equipment due to performance or safety considerations</li> <li>Perform routine maintenance and basic repairs of tools and equipment</li> </ul>

TECHNICAL SKILLS AND COMPETENCIES			
Automation of Landscape Operations	Level 2	Plant Identification	Level 2
Environment Management in Landscape Operations	Level 2	Plant Pruning	Level 2
Hazards and Risk Control, and Policy Management	Level 2	Skyrise Greenery Maintenance	Level 2
Horticultural Chemical Usage	Level 2	Soil and Media Assessment and Remediation	Level 2
Incident and Accident Investigation	Level 2	Turf Maintenance	Level 2
Landscape Drainage Management	Level 2	Vegetation Planting	Level 2
Landscape Irrigation Management	Level 2	Water Features Management	Level 2
Landscape Tools, Equipment and Machinery Management	Level 2	Work at Heights	Level 1
Plant Health Management and Disease Control	Level 2		

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Communication	Intermediate	Interpersonal Skills	Basic	
Teamwork	Intermediate	Service Orientation	Intermediate	
Problem Solving	Basic			

For a list of Training Programmes available for the Landscape sector, please visit: **www.skillsfuture.sg/skills-framework/landscape** 

#### Landscape Supervisor/Assistant Landscape Supervisor/Landscape Team Leader

#### **JOB ROLE DESCRIPTION**

The Landscape Supervisor/Landscape Assistant Supervisor/Landscape Team Leader leads landscape maintenance for a particular site or part of a large site, and may on occasion, manage multiple sites for landscape maintenance. He/She plans the manpower deployment and work allocation for workers and technicians on site, and oversees the execution of maintenance work as per established schedule, procedures and workplace safety and health regulations. He monitors performance of maintenance work and reports back progress of maintenance activities to the office on a regular basis.

The work involves high amount of planning and coordination as well as oversight of execution of landscape maintenance. He operates on site and in office to manage daily operations.

He should be proficient at communication in order to communicate expectations of work clearly as well as report on back issues and challenges as required. He should be an able leader to lead the maintenance team on site. He should have an eye for detail to be able to spot problems and errors on the site.

	CRITICAL WORK FUNCTIONS	KEYTASKS
	Plan landscape maintenance	Perform site assessment to determine scope of landscape work
		• Provide inputs to the overall manpower and resource planning for landscape maintenance work
		• Plan the deployment of manpower and resources to carry out maintenance work on the site
		• Communicate roles and responsibilities to workers and technicians to carry out maintenance work on the site
	Execute landscape maintenance	<ul> <li>Conduct on-the-job training (OJT) for workers and technicians to enable them to perform assigned tasks</li> </ul>
CRITICAL WORK		• Create alternate access routes to facilitate segregation of work site area for maintenance
FUNCTIONS AND KEY TASKS		<ul> <li>Guide workers and technicians in the use of chemicals and other substances for plant maintenance</li> </ul>
		<ul> <li>Resolve technical and/or manpower challenges that may impact the execution of landscape maintenance on site</li> </ul>
		• Prepare site reports to track progress of landscape maintenance
	Manage safety of landscape operations	<ul> <li>Oversee adherence to workplace safety and health (WSH) regulations and usage of personal protective equipment (PPE)</li> </ul>
		<ul> <li>Prepare maintenance checklists and schedule periodic preventive maintenance for tools and equipment</li> </ul>
		<ul> <li>Conduct toolbox meetings to brief team on safety based on site risk assessment, safety procedures and protocol</li> </ul>
		• Train and supervise workers in performing maintenance and repairs on tools and equipment

### Landscape Supervisor/Assistant Landscape Supervisor/Landscape Team Leader

TECHNICAL SKILLS AND COMPETENCIES		
Automation of Landscape Operations	Level 3	Plant Pruning Level
Environment Management in Landscape Operations	Level 3	Project Management Level
Hazards and Risk Control, and Policy Management	Level 3	Site Assessment and Analysis Level
Horticultural Chemical Usage	Level 3	Skyrise Greenery Maintenance Level
Horticultural Maintenance Programme	Level 3	Soil and Media Assessment and Remediation Level
Incident and Accident Investigation	Level 3	Stakeholder Management Level
Landscape Drainage Management	Level 3	Turf Maintenance Level
Landscape Irrigation Management	Level 3	Vegetation Planting Level
Landscape Tools, Equipment and Machinery Management	Level 3	Water Features Management Level
Plant Health Management and Disease Control	Level 3	Work at Heights Level
Plant Identification	Level 3	

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Communication	Advanced	Decision Making	Advanced	
Problem Solving	Intermediate	Teamwork	Advanced	
Leadership	Advanced			

### Landscape Manager

#### **JOB ROLE DESCRIPTION**

The Landscape Manager leads the execution of landscape enhancement for maintenance of softscapes and hardscapes. He/She is responsible for the scoping, planning, initiating and execution of such projects by leading a team of supervisors, technicians and workers. He may manage multiple maintenance sites or projects concurrently and must balance priorities amongst them. He is also involved in business development activities, including the development of proposals for getting new contracts as well as the development of marketing collaterals to grow the organisation's brand in the sector.

The work involves significant amount of planning and coordination to ensure successful execution of maintenance projects. He is required to balance his time between planning and reviewing progress reports in office, and monitoring actual execution on site.

He is an efficient planner and project manager, often required to manage within resource constraints. He should be an effective communicator and comfortable in problem solving as well as resolving conflicts. He should also be proficient in collaboration and stakeholder management, given the number of stakeholders he must engage with on a regular basis.

	CRITICAL WORK FUNCTIONS	KEYTASKS
	Execute business development	• Collaborate with the management team in the development of marketing collaterals for business development
		<ul> <li>Participate in tender interviews, pitch meetings and/or marketing presentations to potential clients to showcase technical capability and experience</li> </ul>
		• Undertake site visits to determine on site challenges that may impact the scope of work or achievement of contract criteria
		• Evaluate the technical and commercial feasibility of the scope of work with respect to the organisation's technical capabilities and commercial considerations
		<ul> <li>Develop cost and effort estimates to create technical and commercial proposals to bid for a tendered contract</li> </ul>
	Plan landscape maintenance	<ul> <li>Attend client briefings to establish requirements, expectations, key performance indicators (KPIs) and service level agreements (SLAs)</li> </ul>
CRITICAL WORK		<ul> <li>Conduct detailed site assessment to define actual scope of work on site and associated risks and challenges</li> </ul>
FUNCTIONS AND KEY TASKS		<ul> <li>Plan the requirements for manpower, materials, tools and equipment as well as supervision for the site, taking into consideration budget and contract specifications</li> </ul>
		<ul> <li>Designate worksite for manpower deployment depending on related work, manning and tools and equipment requirement</li> </ul>
		<ul> <li>Establish reporting norms for supervisors to follow to report site progress and issues</li> </ul>
		<ul> <li>Plan the work schedules of teams for landscape maintenance to be done effectively</li> </ul>
	Execute landscape maintenance	<ul> <li>Communicate roles, responsibilities and performance expectations to supervisors in charge of the site</li> </ul>
		<ul> <li>Advise on technical and manpower challenges pertaining to landscape maintenance</li> </ul>
		• Review site reports to track progress of landscape maintenance on site
		• Enforce workplace safety and health (WSH) regulations
	Manage safety of landscape	<ul> <li>Assess the risks associated with landscape maintenance on site</li> </ul>
	operations	<ul> <li>Establish safety procedures, protocol and guidelines for landscape maintenance on site</li> </ul>

## Landscape Manager

	CRITICAL WORK FUNCTIONS	KEY TASKS		
CRITICAL WORK FUNCTIONS AND KEY TASKS	Evaluate project and operational performance	• Evaluate performance of allocated sites based on key performance indicators (KPIs), service level agreement (SLA) and key established metrics		
		<ul> <li>Identify causes for underperformance and operational issues for assigned projects</li> </ul>		
		<ul> <li>Ideate solutions for improvement of operational performance of assigned projects</li> </ul>		
		<ul> <li>(KPIs), service level agreement (SLA) and key established metrics</li> <li>Identify causes for underperformance and operational issues for assigned projects</li> <li>Ideate solutions for improvement of operational performance of assigned projects</li> <li>Deploy measures to improve performance in terms of quality, productivity and cost of maintenance</li> <li>Communicate common goals, direction and accountability among staff</li> <li>Develop staff through capability development and coaching</li> <li>Implement effective performance management practices within department in accordance with company policies and procedures</li> <li>Monitor budgets, forecasting, work allocations and staffing of the various</li> </ul>		
	Manage organisational development	Communicate common goals, direction and accountability among staff		
		<ul> <li>Develop staff through capability development and coaching</li> </ul>		
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>		

TECHNICAL SKILLS AND COMPETENCIES		
Automation of Landscape Operations	Level 4	Plant Health Management and Disease Control
Budgeting	Level 3	Plant Identification
Business Development	Level 4	Project Management
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5	Site Assessment and Analysis
Environment Management in Landscape Operations	Level 4	Skyrise Greenery Maintenance
Hazards and Risk Control, and Policy Management	Level 4	Soil and Media Assessment and Remediation
Horticultural Chemical Usage	Level 4	Stakeholder Management
Horticultural Maintenance Programme	Level 4	Strategy Planning
Incident and Accident Investigation	Level 4	Turf Maintenance
Innovation Management	Level 4	Vendor Management
Landscape Drainage Management	Level 4	Water Features Management
Landscape Irrigation Management	Level 4, Level 5	Workflow Digitalisation
Landscape Tools, Equipment and Machinery Management	Level 4	Workplace Safety and Health Policy Development
Learning and Development	Level 4	

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Leadership	Advanced	Decision Making	Intermediate	
Communication	Advanced	Interpersonal Skills	Advanced	
Problem Solving	Advanced			

Level 4, Level 5 Level 4

Level 4

Level 4 Level 3, Level 4 Level 4 Level 4 Level 3, Level 4 Level 4

Level 4

Level 4, Level 5




## Arboriculture

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#### **Arborist**

Serene Chow Prince's Landscape and Construction Pte Ltd

#### THE TREE WHISPERER

Singapore has one of the highest population densities in the world and sharing this space are about two million trees planted along roadsides, in parks and on state land. Hence, it is very important that the trees are well maintained.

This mammoth task would fall on arborists, like Serene, to keep them strong and sturdy. Commonly known as a "tree doctor", Serene is a professional specialising in the care, diagnosis and maintenance of tree health, travelling from construction sites to condominiums, and even off-shore industrial islands, to do her job.

"I can work anywhere where there is a tree," she says. "I typically visit the sites to perform tests, which include reading the 'body language' of trees, to collect data for my reports." As part of her job, Serene liaises frequently with various stakeholders, such as main contractors, consultants, architects, government agencies and building management. She supervises the protection of trees on-site while close-proximity work is being carried out, and steps in to assess and mitigate during emergencies when the trees suffer accidental damages.

With 10 years under her wing as an International Society of Arboriculture (ISA) Certified Arborist, and over 20 years in the landscape industry, Serene has a bona fide passion for all things green. "I first started in landscaping as an administrative secretary, but cultivated a personal passion in understanding the biology and care of plants. That passion has kept me in this field," she shares. Serene feels a strong sense of achievement in caring for and saving trees, and firmly abides by the Arborists' Code of Ethics in her work, ensuring that her reports are always based on her factual and objective assessments. Saving a local heritage tree, and successfully guiding the safe transplantation of over a hundred protected trees on a project site in Mumbai, India, stand among her proudest accomplishments.

"It is rare that you come across textbook cases, and each site presents a different learning experience," she says. To stay abreast of the latest developments and standards, Serene counts on regular society meetings and refresher courses to bolster her knowledge. She says, "The Skills Framework for Landscape highlights emerging trends such as digitalisation and mechanisation, which will help me to identify new areas of growth, to stay ahead and do my job efficiently."

The Skills Framework for Landscape highlights emerging trends such as digitalisation and mechanisation, which will help me to identify new areas of growth, to stay ahead and do my job efficiently.

## **Arboriculture Technician**

#### **JOB ROLE DESCRIPTION**

The Arboriculture Technician executes technical processes involved in arboriculture implementation and maintenance. He/She performs tasks involving the use of specialised tools and equipment, including mechanisation and automation technology. He may provide guidance to workers in performing arboriculture tasks, in the absence of a team lead.

He is an individual contributor who must deliver allocated tasks as part of a team. The work involves high amount of manual work as well as the use of significant amount of mechanisation and automation. He may be required to work at heights which may include the climbing of trees.

He should be task-oriented and able to adhere to processes and procedures in accordance to workplace safety and health requirement. He should be comfortable with mechanisation and automation technology. He should have an eye for analysing tasks and looking for ways to improving processes.

	CRITICAL WORK FUNCTIONS	KEYTASKS
CRITICAL WORK FUNCTIONS AND KEY TASKS	Execute arboriculture implementation	<ul> <li>Execute excavation for tree planting or transplantation using manual and mechanised methods</li> <li>Execute tree transplantation involving extraction, transportation and establishment of trees at receptor sites</li> <li>Execute the removal of trees using manual and/or mechanised methods</li> <li>Execute post-transplantation maintenance procedures until completion of re-growth and stabilisation of tree health</li> <li>Adhere to workplace safety and health (WSH) guidelines and protocol and usage of personal protective equipment (PPE) during arboriculture implementation operations</li> </ul>
	Execute tree maintenance	<ul> <li>Execute tree pruning using specialised equipment</li> <li>Install support systems to ensure tree stability</li> <li>Adhere to workplace safety and health (WSH) guidelines and protocol and usage of personal protective equipment (PPE) during tree maintenance</li> <li>Perform routine maintenance and basic repairs on tools and equipment</li> </ul>

TECHNICAL SKILLS AND COMPETENCIES			
Automation of Landscape Operations	Level 2	Plant Identification	Level 2
Chainsaw Operations	Level 2	Soil and Media Assessment and Remediation	Level 2
Environment Management in Landscape Operations	Level 2	Tree Climbing and Aerial Rescues	Level 2
Hazards and Risk Control, and Policy Management	Level 2	Tree Health Management	Level 2
Horticultural Chemical Usage	Level 2	Tree Pruning	Level 2
Incident and Accident Investigation	Level 2	Tree Removal	Level 2
Landscape Irrigation Management	Level 2	Tree Transplantation	Level 2
Landscape Tools, Equipment and Machinery Management	Level 2	Work at Heights	Level 1

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Teamwork	Intermediate	Interpersonal Skills	Intermediate	
Communication	Intermediate	Service Orientation	Intermediate	
Problem Solving	Intermediate			

For a list of Training Programmes available for the Landscape sector, please visit: **www.skillsfuture.sg/skills-framework/landscape** 

#### Arboriculture Supervisor/Arboriculture Team Leader

#### **JOB ROLE DESCRIPTION**

The Arboriculture Supervisor/Arboriculture Team Leader leads and oversees the site execution of arboriculture operations in accordance to workplace safety and health requirements. He/She is responsible for the execution of the site plans for implementation or maintenance works pertaining to arboriculture. He allocates work and guides workers and technicians in the performance of their tasks, and trains workers in performing new tasks at the site. He monitors the progress and performance of arboriculture works at the site and reports back to the management with detailed site reports. He is expected to liaise with the clients or their agents for day-to-day operational aspects of the site works.

He is involved in both execution and oversight of arboriculture works. The work involves high amount of supervision and monitoring of operational tasks, training of staff, as well as internal and external liaison. His time is spent almost entirely at the work site, but he may spend some time in office for planning or reporting.

He is an able planner. He should be task-oriented, comfortable in guiding others and proficient in communicating within and outside the team. He should have an eye for detail to spot lapses or issues. He should be responsive in order to resolve issues in time.

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Execute arboriculture implementation	• Oversee the end-to-end process of tree transplantation
		• Guide ground and aerial staff in executing tree removal to clear land for new developments
		<ul> <li>Oversee team of workers in executing installation of trees and tasks pertaining to implementation processes</li> </ul>
		• Oversee post-transplantation maintenance procedures until completion of re-growth and stabilisation of tree health
		• Report the progress of implementation as well as technical issues from site to the management team
	Execute tree maintenance	<ul> <li>Plan the site manpower deployment and work allocation for tree maintenance works</li> </ul>
		• Conduct on-the-job training for workers and technicians on tree maintenance
CRITICAL WORK FUNCTIONS AND		<ul> <li>Oversee tree maintenance and tree pruning as per maintenance plans provided</li> </ul>
KEY TASKS		• Oversee the installation of support systems to ensure tree stability
	Manage arboriculture works	<ul> <li>Assist the development of the execution plans and procedures for arboriculture implementation operations</li> </ul>
		<ul> <li>Resolve technical and/or manpower challenges that may impact the execution of tree maintenance on site</li> </ul>
		• Track progress of arboriculture works through reports and dashboards to ensure documentation of work done
		• Provide status updates to the management team on work progress, resource requirements and issues and challenges in arboriculture works
		<ul> <li>Oversee adherence to workplace safety and health (WSH) guidelines and protocol and usage of personal protective equipment (PPE) for arboriculture works</li> </ul>
		• Train workers in performing basic maintenance and repairs on tools and equipment

## Arboriculture Supervisor/Arboriculture Team Leader

TECHNICAL SKILLS AND COMPETENCIES			
Automation of Landscape Operations	Level 3	Project Management	Level 3
Chainsaw Operations	Level 3	Site Assessment and Analysis	Level 3
Environment Management in Landscape Operations	Level 3	Soil and Media Assessment and Remediation	Level 3
Hazards and Risk Control, and Policy Management	Level 3	Stakeholder Management	Level 2
Horticultural Chemical Usage	Level 3	Tree Climbing and Aerial Rescues	Level 2
Incident and Accident Investigation	Level 3	Tree Health Management	Level 3
Landscape Irrigation Management	Level 3	Tree Pruning	Level 3
Landscape Tools, Equipment and Machinery Management	Level 3	Tree Removal	Level 3
Plant Identification	Level 3	Tree Transplantation	Level 3
Plant Selection for Landscape Development	Level 3	Work at Heights	Level 3

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Teamwork	Intermediate	Service Orientation	Intermediate	
Communication	Intermediate	Problem Solving	Intermediate	
Leadership	Intermediate			

## Arborist/Arboricultural Consultant

#### **JOB ROLE DESCRIPTION**

The Arborist/Arboricultural Consultant leads arboriculture advisory and execution for new infrastructural developments as well as existing establishments that may require additions and alterations. He/She influences landscape designs from an arboriculture perspective to ensure compliance to safety, function, tree health and aesthetic requirements. He influences technology adoption for arboriculture works. He establishes processes for arboriculture implementation and maintenance, and oversees the implementation by advising on technical issues and challenges. He must have ethical considerations in dealing with client requirements against tree health and conservation.

He may provide external advisory services for tree assessment for new developments, existing projects as well as transplantation of heritage trees.

He is an expert on arboriculture and often works in individual capacity to advise on projects pertaining to tree planting and maintenance. He may also work as part of a team to guide execution teams for such works.

He should have an eye for detail and the ability to spot tree health issues. He should be comfortable with logical deduction and inferential decision-making. He should be process-oriented and comfortable in tailoring established processes for specific requirements. He must be collaborative and comfortable in providing coaching and guidance to team members.

	CRITICAL WORK FUNCTIONS	KEY TASKS
		• Collaborate with the management team in the development of marketing collaterals for business development
		<ul> <li>Participate in marketing presentations to various external stakeholders to showcase technical capabilities and experience</li> </ul>
		• Assess tender or contract requirements to determine the scope of work
	Execute business development	• Undertake site visits to determine on-site challenges that would impact the scope of work or achievement of contract requirements
		• Evaluate the regulatory, technical and commercial feasibility of the scope of work with respect to the organisation's technical capabilities and commercial considerations
CRITICAL WORK FUNCTIONS AND		• Develop cost and effort estimates for technical and commercial proposals to bid for tendered contracts
KEY TASKS	Influence landscape and architectural designs from arboriculture perspective	<ul> <li>Influence technology adoption to enhance safety, quality, efficiency and productivity in the organisation</li> </ul>
		<ul> <li>Evaluate architectural and landscape designs from an arboriculture perspective with a view to determine the arboriculture impact</li> </ul>
		<ul> <li>Communicate arboriculture concerns to building architects and landscape designers to influence the improvement of building and landscape designs from an arboriculture perspective</li> </ul>
		<ul> <li>Collaborate with consulting teams on methods to mitigate the arboriculture impact of new developments by enhancing building and landscape designs</li> </ul>
		<ul> <li>Advise on soil and media as well as drainage requirements in the implementation of projects</li> </ul>
		• Lead responses to queries from authorities on recommendations made in tree reports

## **Arborist/Arboricultural Consultant**

	CRITICAL WORK FUNCTIONS	KEY TASKS
		• Articulate the objectives of tree assessment in agreement with the clients and all stakeholders
		• Assess the health and structural stability of specific trees
		• Guide extraction of samples as required for further assessment to determine tree health
	Execute tree assessments	<ul> <li>Recommend mitigation measures based on tree assessment and evaluation of possible options to prevent tree failure</li> </ul>
		<ul> <li>Approve tree transplantation decisions based on assessment of tree health, form, structure and stability, and available access routes and resources</li> </ul>
		• Recommend alternate courses of action where tree conservation is critical, but transplantation may not be possible
		• Assess the scope, requirements, risks, timelines, costs and viability of tree transplantation
	Manage arboriculture works	• Develop the execution plans and procedures for arboriculture implementation operations with consideration for requirement of specific trees
CRITICAL WORK FUNCTIONS AND KEY TASKS		<ul> <li>Obtain approvals and authorisation from regulatory bodies for tree removal, transplantation and other arboriculture implementation operations</li> </ul>
		<ul> <li>Plan the manpower and resource requirements for arboriculture implementation and maintenance works</li> </ul>
		<ul> <li>Advise on tree selection for landscape projects by participating in nursery visits and recommending alternatives for unavailable species</li> </ul>
		<ul> <li>Determine the approach for the removal of trees from sites through felling, rigging and/or any other specialised techniques that may be required owing to site challenges</li> </ul>
		• Design tree care plans and Standard Operating Procedures (SOPs) for tree maintenance
		<ul> <li>Drive adherence to established safety standards and protocol for arboriculture implementation and maintenance works</li> </ul>
		Communicate common goals, direction and accountability among staff
	Manage organisational development	Develop staff through capability development and coaching
		• Implement effective performance management practices within department in accordance with organisational policies and procedures
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>

## **Arborist/Arboricultural Consultant**

TECHNICAL SKILLS AND COMPETENCIES	
Automation of Landscape Operations	Level 4, Level 5
Budgeting	Level 4
Business Development	Level 4
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5
Data Analysis and Interpretation	Level 4
Environment Management in Landscape Operations	Level 4
Hazards and Risk Control, and Policy Management	Level 4
Horticultural Chemical Usage	Level 4
Incident and Accident Investigation	Level 4
Innovation Management	Level 4
Landscape Irrigation Management	Level 4, Level 5
Landscape Tools, Equipment and Machinery Management	Level 4
Learning and Development	Level 4
Plant Identification	Level 4
Plant Selection for Landscape Development	Level 4
Project Management	Level 4

Site Assessment and Analysis	Level 4, Level 5
Soil and Media Assessment and Remediation	Level 4
Stakeholder Management	Level 3, Level 4
Strategy Planning	Level 4
Tree Assessments	Level 4, Level 5
Tree Climbing and Aerial Rescues	Level 3
Tree Conservation and Protection	Level 4, Level 5
Tree Health Management	Level 4
Tree Pruning	Level 4
Tree Removal	Level 4, Level 5
Tree Transplantation	Level 4, Level 5
Vendor Management	Level 3, Level 4
Work at Heights	Level 3
Workflow Digitalisation	Level 4
Workplace Safety and Health Policy Development	Level 4, Level 5

GENERIC SKILLS AND COMPETENCIES (TOP 5)				
Leadership	Intermediate	Decision Making	Intermediate	
Service Orientation	Advanced	Communication	Intermediate	
Interpersonal Skills Intermediate				

## Nursery

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#### **Nursery Supervisor**

Reuben Mark Greenology Pte Ltd

#### NURSING NATURE, NURTURING PASSION

Reuben first discovered his passion for plants and the environment in school. Biology was his favourite subject, and he enjoyed the outdoors and nature as a member of the Environmental Club. This spurred him to pursue a diploma in Landscape Design & Horticulture, and he is currently a Plant Nursery Supervisor at Greenology.

As part of his role, Reuben manages the daily operations of the nursery and the staff. His duties include maintaining plant stocks with appropriate care regimes and practices, procuring plants, and working with clients to supervise the planting and maintenance of Greenology's signature "green walls". "I like that the focus of my role is to observe the whole process of nurturing the plants from the beginning to its maturity," he shares.

Reuben's personal goal is to successfully grow as many plant and crop types as possible in land-scarce Singapore. "Whether they are ornamental or food crops, plants are important in a garden-city like ours, where most things are imported. I can contribute by learning different ways to propagate new plants sustainably, in space-saving solutions like vertical gardens," he says.

In addition to his duties, Reuben spends his time working to maintain and improve Greenology's hydroponics and urban farming set-ups, undertaking research and trials for new treatments, pestmanagement and growing methods, as well as cultivating new non-tropical and cooler-climate species. One of his proudest moments involved successfully setting up a working indoor "green wall" of herbs. "I had been experimenting with growing herbs under grow lights—a challenge as they usually need much stronger sunlight to flourish—and showed it to a walk-in client who wanted it done completely indoors. It took us three months of research and trial to find the right species and system, but we ultimately succeeded."

In the future, Reuben plans to fulfil his dream of doing full-time research by getting a degree in Plant & Horticultural Science. "The Career Pathway from the Skills Framework for Landscape would allow me to chart out my career path and skills development, to remain relevant in my area of work and further grow my skills."

The Career Pathway from the Skills Framework for Landscape would allow me to chart out my career path and skills development, to remain relevant in my area of work and further grow my skills.

## **Nursery Technician**

#### **JOB ROLE DESCRIPTION**

The Nursery Technician executes nursery work and tasks to support the nursery production and business requirements. He/She performs plant propagation and related production activities, as well as, plant care management tasks to ensure the health of planted stock. He supports plant inventory management, nursery display, nursery sales and fulfilment activities and general housekeeping of the nursery premises.

He is able to execute the nursery tasks independently within prescribed guidelines and may guide workers in performing allocated tasks. He is adept to the adoption of new nursery processes and technology, as well as adherence to workplace safety and health practices and regulations. He works primarily in an outdoors environment and may be required to move around various sites within the nursery facilities to perform his allocated duties.

	CRITICAL WORK FUNCTIONS	KEY TASKS
		• Perform handling, packaging, loading and unloading of plants and materials to support inbound and outbound transportation for the nursery
	Execute nursery operations	• Report inventory levels to ensure appropriate stock levels of plants and merchandise are maintained in the nursery
		Perform tagging and labelling for all plant stock
		• Execute production of soil mix or plant propagation media
		<ul> <li>Perform plant propagation using appropriate modes for different plant species</li> </ul>
	Execute nursery production and plant care management	<ul> <li>Execute planting, transplantation and re-potting of plants based on plant production requirements</li> </ul>
		• Execute manual and/or automated irrigation of plants in the nursery
CRITICAL WORK		• Perform pruning, weeding and soil amelioration to maintain plant health
FUNCTIONS AND KEY TASKS		<ul> <li>Identify and report plant health problems concerning pests, diseases, noxious species and malnutrition</li> </ul>
		• Execute safe administration of chemicals to treat plant health
	Execute nursery sales activities	• Provide information on nursery products and services to customers
		• Assist in demonstrations on plant care management to customers
		Package selected plants for presentation or delivery
		<ul> <li>Install nursery displays for plants and merchandise</li> </ul>
	Manage safety of landscape operations	<ul> <li>Adhere to applicable workplace safety and health (WSH) regulations and usage of personal protective equipment (PPE)</li> </ul>
		<ul> <li>Perform housekeeping tasks to ensure cleanliness and hygiene in the nursery</li> </ul>
		<ul> <li>Store and handle chemicals and biological control agent supplies in accordance with prescribed guidelines</li> </ul>
		Maintain tools and equipment

## **Nursery Technician**

TECHNICAL SKILLS AND COMPETENCIES			
Automation of Landscape Operations	Level 2	Landscape Irrigation Management L	_evel 2
Display Creation and Management	Level 2	Landscape Tools, Equipment and Machinery L Management	_evel 2
Environment Management in Landscape Operations	Level 2	Plant Health Management and Disease Control	_evel 2
Flower Arrangement	Level 2	Plant Identification L	_evel 2
Flower Harvesting and Handling	Level 2	Plant Propagation and Production	_evel 2
Hazards and Risk Control, and Policy Management	Level 2	Plant Pruning L	_evel 2
Horticultural Chemical Usage	Level 2	Soil and Media Assessment and Remediation	_evel 2
Incident and Accident Investigation	Level 2	Vegetation Planting L	_evel 2
Inventory Control	Level 2		

GENERIC SKILLS AND COMPETENCIES (TOP 5)			
Teamwork	Intermediate	Interpersonal Skills	Intermediate
Communication	Basic	Problem Solving	Intermediate
Service Orientation	Intermediate		

## Nursery Supervisor/Nursery Team Leader

#### **JOB ROLE DESCRIPTION**

The Nursery Supervisor/Nursery Team Leader oversees the execution of daily nursery activities involving plant propagation, plant care management, inventory management, nursery display and plant sales and fulfilment. He/She has oversight of a team of nursery workers and technicians in performing both manual and mechanised nursery operations. He allocates work, monitors performance and reports to the management regarding all nursery activities. He also provides updates to the management on production progress and performance of nursery work.

He has good organisational skills, is able to communicate and provide clear instructions when delegating work to his team. He is good in soliciting feedback on nursery operations and reporting to the management. He is meticulous in adhering to production plans and schedule, and ensures adherence to workplace health and safety practices and regulations. He works primarily in an outdoors environment and may be required to move around various sites within the nursery facilities to perform his duties.

Manage nursery operations          • Provide on-site, manpower and resources information for reporting and monitoring purposes         • Execute recording of plants and other inventory         • Review tagging and labelling of stock as per established standards and guidelines         • Report overall ground information to support purchasing decisions         • Implement plant and media production processes to meet stock requirements for plants in allocated sections of the nursery         • Implement plant propagation practices, schedule propagation	
Manage nursery operations       • Review tagging and labelling of stock as per established standards and guidelines         • Report overall ground information to support purchasing decisions         • Implement plant and media production processes to meet stock requirements for plants in allocated sections of the nursery         • Implement plant propagation practices, schedule propagation	
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experimentation and oversee validation activities	
Monitor and report the quality and health of plants and flowers produced	
<ul> <li>Propagate a variety of new species or pedigreed cultures of plants to ascertain their production potential</li> </ul>	
CRITICAL WORK     • Implement plant care programmes for allocated sections of the nursery	
• Implement schedules for irrigation, fertilisation, pruning, weeding and application of chemicals to meet plant requirements	
Guide team members in the safe usage of chemicals for plant care	
Monitor weather patterns to implement mitigation measures and ensure     plants are not distressed by unfavourable weather conditions	
Provide horticultural information and advice to customers	
Provide quality customer service directly and through team members while     assisting customers	le
Execute nursery sales activities • Supply plants to clients in the quantities and sizes required	
Oversee the creation of plant and merchandising displays in the nursery, a support the organisation's participation in external exhibitions, shows and sales events	
Contribute to workplace safety and health (WSH) policies and procedures	
Manage safety of landscape operations • Control the safe storage, handling and transportation and use of chemical and biological control agent supplies	L
• Train and supervise workers in carrying out maintenance and repairs on tools and equipment	

## Nursery Supervisor/Nursery Team Leader

#### TECHNICAL SKILLS AND COMPETENCIES

Automation of Landscape Operations	Level 3
Display Creation and Management	Level 3
Environment Management in Landscape Operations	Level 3
Flower Arrangement	Level 3
Flower Harvesting and Handling	Level 3
Hazards and Risk Control, and Policy Management	Level 3
Horticultural Chemical Usage	Level 3
Horticultural Maintenance Programme	Level 3
Incident and Accident Investigation	Level 3
Inventory Control	Level 3
Landscape Irrigation Management	Level 3

Landscape Tools, Equipment and Machinery Management	Level 3
Merchandise Buying	Level 3
Nursery Operations Management	Level 3
Plant Health Management and Disease Control	Level 3
Plant Identification	Level 3
Plant Propagation and Production	Level 3
Plant Pruning	Level 3
Plant Selection for Landscape Development	Level 3
Soil and Media Assessment and Remediation	Level 3
Stakeholder Management	Level 2
Vegetation Planting	Level 3

GENERIC SKILLS AND COMPETENCIES (TOP 5)			
Communication	Intermediate	Problem Solving	Intermediate
Interpersonal Skills	Intermediate	Teamwork	Intermediate
Leadership	Intermediate		

### **Nursery Manager**

#### **JOB ROLE DESCRIPTION**

The Nursery Manager leads the overall operations of a nursery. He/She is responsible for driving plant production and plant care operations by establishing processes, providing technical guidance and reviewing plant production performance. He provides horticultural expertise to guide plant propagation and plant care management to enhance nursery production requirements. He drives adherence to inventory management of plants and other products in the nursery by establishing systems and processes to improve operational efficiency in the nursery. He also ensures compliance to workplace safety and health practices and requirements. He leads business development to solicit new clients and retail sales activities and takes part in horticultural events to profile the nursery offerings. He also provides coaching to team members, manages the team's performance and operational budgets.

He is an able leader and a people manager who is proficient in planning and organising the nursery operations to meet the organisation and business needs. He has excellent communication and networking skills and is able to align the interest of key stakeholders as well as a good motivator and coach to his internal teams.

	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage business	<ul> <li>Collaborate with the management team in the development of marketing collaterals for business development</li> </ul>
		<ul> <li>Participate in marketing presentations to potential clients, landscape designers and landscape contractors to showcase technical capabilities and experience</li> </ul>
	development	<ul> <li>Represent the organisation for networking purposes at conventions, seminars and other public forums</li> </ul>
		• Facilitate site visits for landscape development teams to showcase specimen and suitability of own facilities to support landscape projects
		• Source and negotiate contracts for land leases and procurement of plants for the nursery
		<ul> <li>Develop plans and budgets for the nursery as per business requirements to ensure business objectives are met</li> </ul>
		<ul> <li>Establish measures to track operational progress and costs against established milestones and budgets</li> </ul>
	M	• Direct the allocation of manpower and other resources within the nursery
CRITICAL WORK FUNCTIONS AND		<ul> <li>Lead decisions to modify layouts and re-merchandise areas as per business requirements</li> </ul>
KEY TASKS		<ul> <li>Direct the preparation and maintenance of records of plants, production, stock and inventory records and reports</li> </ul>
		<ul> <li>Establish guidelines for tagging and labelling of stock</li> </ul>
		<ul> <li>Review consolidated reports on stock and inventory levels to undertake procurement decisions if necessary</li> </ul>
		• Establish optimal and innovative plant growing practices, including soil and media recommendations based on plant physiology
		• Establish horticultural production systems to meet specific requirements of plant production based on demand patterns and orders
	Execute nursery production and plant care management	<ul> <li>Review production and quality metrics to evaluate plant production performance</li> </ul>
		• Develop integrated plant care programmes to ensure maintenance of plant health and optimal yield from nursery stock
		• Review the effectiveness of plant care programmes and activities for the nursery
		• Deploy measures to improve plant care activities to enhance the quality of plants being grown at the nursery
		<ul> <li>Resolve technical and horticultural issues and challenges in plant care management</li> </ul>

## Nursery Manager

	CRITICAL WORK FUNCTIONS	KEY TASKS
		• Lead awareness of plant, home and garden trends to provide horticultural information to team to enable them to interact effectively with customers
	Managa nunaanu aalaa	• Facilitate the selection of plants for clients in accordance with requirements
	Manage nursery sales activities	• Build strong relationships and networks with key buyers of horticultural products and services
		• Organise the development of displays to showcase plants in the nursery, as well as external exhibitions, shows and sales events
		<ul> <li>Develop workplace safety and health (WSH) policies and procedures that adhere to legal standards</li> </ul>
CRITICAL WORK FUNCTIONS AND KEY TASKS Manage safety of landscape operations		<ul> <li>Manage the implications of legislative requirements on industry management and work practices</li> </ul>
	<ul> <li>Review the storage of chemical and biological control agent supplies to ensure proper handling and management</li> </ul>	
		<ul> <li>Create processes to inspect on the working conditions of facilities, tools and equipment</li> </ul>
		Communicate common goals, direction and accountability among staff
		Develop staff through capability development and coaching
	Manage organisational development	• Implement effective performance management practices within department in accordance with company policies and procedures
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>

TECHNICAL SKILLS AND COMPETENCIES	
Automation of Landscape Operations	Level 4, Level 5
Budgeting	Level 4
Business Development	Level 4
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5
Display Creation and Management	Level 4
Environment Management in Landscape Operations	Level 4
Flower Arrangement	Level 4
Flower Harvesting and Handling	Level 4
Hazards and Risk Control, and Policy Management	Level 4
Horticultural Chemical Usage	Level 4
Horticultural Maintenance Programme	Level 4
Incident and Accident Investigation	Level 4
Innovation Management	Level 4
Inventory Control	Level 4
Landscape Irrigation Management	Level 4, Level 5

Landscape Tools, Equipment and Machinery Management	Level 4
Learning and Development	Level 4
Merchandise Buying	Level 4
Nursery Operations Management	Level 4, Level 5
Plant Health Management and Disease Control	Level 4, Level 5
Plant Identification	Level 4
Plant Propagation and Production	Level 4
Plant Selection for Landscape Development	Level 4
Soil and Media Assessment and Remediation	Level 4
Stakeholder Management	Level 3, Level 4
Strategy Planning	Level 4
Vendor Management	Level 3, Level 4
Workflow Digitalisation	Level 4
Workplace Safety and Health Policy Development	Level 4, Level 5

## **Nursery Manager**

GENERIC SKILLS AND COMPETENCIES (TOP 5)			
Leadership	Advanced	Communication	Advanced
Problem Solving	Advanced	Managing Diversity	Advanced
Decision Making	Advanced		

# Managing Director

JOB ROLES

Managing Director

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## **Managing Director**

#### **JOB ROLE DESCRIPTION**

The Managing Director establishes the business strategies for the organisation and develops plans to enable execution of the business strategies. He/She is responsible for tracking market development and trends to inform strategic decision making and ensure the organisation remains current with the changing face of the sector. He leads the organisation's business development efforts to get more projects and grow the business. He also drives the adoption of innovation and new technology to continuously improve the productivity and efficiency of the workforce.

The work involves strategic goal setting, business development and business leadership. A significant part of his time goes into external meetings with potential clients for the purpose of business development. He also spends his time developing strategies and plans, and reviewing business and operational performance.

He is a strategic thinker and business planner. He is an able leader who guides the organisation and the management in the execution of business plans. He should also be an effective communicator in order to influence external stakeholders.

	CRITICAL WORK FUNCTIONS	KEYTASKS
	Establish business strategies	• Drive research to identify developments, trends and emerging technologies in the sector
		• Track market developments to stay abreast of trends, opportunities and risks in the sector
		• Articulate the vision for the organisation to set the tone for business strategies
		• Establish the business strategies for the organisation based on sound understanding of the sector to set the direction for the business
	and plans	• Set periodic commercial and other objectives for the business
		• Develop operating plans for the execution of business strategies and the achievement of business goals
		• Maintain relationships with stakeholders to ensure long-term financial viability of the organisation
		• Review and implement mitigating actions to maintain quality and standards of the organisation
		• Lead the development of marketing collaterals and other materials to showcase organisation's capability and experience and grow the organisation's brand in the sector
CRITICAL WORK FUNCTIONS AND KEY TASKS	Execute business	<ul> <li>Lead marketing presentations to potential clients, building architects and contractors to showcase technical capability and experience</li> </ul>
		<ul> <li>Make decisions on whether to bid for specific contracts based on technical and commercial evaluation of the scope of work</li> </ul>
	development	• Review technical and commercial proposals to provide inputs for refinement
		<ul> <li>Propose exceptions to contract criteria based on technical feasibility, onsite challenges and/or any other factors to mitigate default risk for the organisation</li> </ul>
		<ul> <li>Lead the presentation of technical and/or commercial proposals during tender interviews or pitch meetings</li> </ul>
		• Establish performance metrics for projects and overall operations
		• Track progress of key projects through taking feedback from managers
		• Review organisation's operational performance and key project performance through tracking of established metrics
	Evaluate project and operational performance	<ul> <li>Identify trends and patterns in operational challenges and issues being reported from various projects</li> </ul>
		• Lead the ideation of solutions to improve operational performance across projects
		Deploy measures to improve operational performance and track progress
		<ul> <li>Seek feedback from project teams on support required for managing projects</li> </ul>

## **Managing Director**

	CRITICAL WORK FUNCTIONS	KEY TASKS
Drive innovation in landscape operations CRITICAL WORK FUNCTIONS AND		<ul> <li>Identify key operational challenges being faced by the organisation and the sector at large</li> </ul>
		• Drive research into identification of technology and process improvements to overcome identified challenges
	• Drive the adoption of new technology and innovative practices within the organisation	
	ONS AND	• Drive a culture of innovation by empowering managers to explore ideas for the improvement of landscape operations
KEY TASKS		• Drive the adoption of digital knowledge sharing and knowledge management systems
		Communicate common goals, direction and accountability among staff
		<ul> <li>Develop staff through capability development and coaching</li> </ul>
	Manage organisational development	<ul> <li>Implement effective performance management practices within department in accordance with company policies and procedures</li> </ul>
		<ul> <li>Monitor budgets, forecasting, work allocations and staffing of the various departments</li> </ul>

TECHNICAL SKILLS AND COMPETENCIES			
Automation of Landscape Operations	Level 5	Learning and Development	Level 5
Budgeting	Level 5	Stakeholder Management	Level 5
Business Development	Level 5	Strategy Planning	Level 5
Contract Preparation, Evaluation, Negotiation and Tendering	Level 5	Vendor Management	Level 5
Data Analysis and Interpretation	Level 5	Workflow Digitalisation	Level 5
Incident and Accident Investigation	Level 5	Workplace Safety and Health Policy Development	Level 6
Innovation Management	Level 5		

GENERIC SKILLS AND COMPETENCIES (TOP 5)						
Leadership	Advanced	Service Orientation	Advanced			
Communication	Advanced	Developing People	Advanced			
Global Mindset	Advanced					

# Overview of Technical Skills and Competencies

#### Technical Skills and Competencies (TSCs)

TSC Category	TEC Name	TSC Name TSC Description	Proficiency Levels							
150 category	I SC Name		1	2	3	4	5	6		
Analysis	Conceptual Thinking	Analyse and synthesise information by identifying key issues, perceiving unseen patterns and trends and deducing connections between issues to develop relevant ideas and solutions			•	•	•			
	Critical Thinking	Examine, manage and connect issues and ideas from multiple perspectives to identify reasoning in a variety of fields with differing assumptions, contents and methods			•	•	•			
	Data Analysis and Interpretation	Extract meaningful patterns and insights from data to improve organisational performance and decision-making		•	•	•	•			
	Site Assessment and Analysis	Plan and execute assessments of landscape sites to evaluate suitability for landscape operations			•	•	•			
Arboriculture	Chainsaw Operations	Operate chainsaws for felling or pruning in horticulture or arboriculture works	•	•	•					
	Tree Assessments	Conduct comprehensive tree assessments to support decision making pertaining to development of new landscapes, maintenance of existing landscape sites, safety and tree conservation				•	•			
	Tree Climbing and Aerial Rescues	Access trees by climbing to carry out arboriculture works or aerial rescue in an emergency situation	•	•	•					
	Tree Conservation and Protection	Develop and implement tree conservation and protection programmes				•	•			
	Tree Health Management	Implement plans, procedures and practices to manage tree health in routine and contingency situations		•	•	•				
	Tree Pruning	Plan, manage and execute the pruning of trees for tree health, maintenance or aesthetic purposes	•	•	•	•				
	Tree Removal	Undertake felling of trees to clear area for new developments or remove diseased or decaying trees	•	•	•	•	•			
	Tree Transplantation	Undertake the transplantation of grown trees or large shrubs from original site to new receptor sites to facilitate new developments, modifications to existing developments or conservation		•	•	•	•			

# Overview of Technical Skills and Competencies

#### Technical Skills and Competencies (TSCs)

TSC Category	TSC Name	TSC Description	Proficiency Le				vels		
150 outegory	150 Nume		1	2	3	4	5	6	
Business Management	Budgeting	Prepare organisational budgets to support short- and long- term business plans through forecasting, allocation and financial policy setting			•	•	•		
	Business Development	Identify new business opportunities to better meet the needs of existing markets and bring benefits to the organisation			•	•	•		
	Contract Preparation, Evaluation, Negotiation and Tendering	Manage contract creation, evaluation, negotiation, and tendering to maximise operation and financial performance of an organisation				•	•		
	Innovation Management	Manage organisation's ability to respond to internal and external opportunities by using creativity to introduce new ideas, processes and products			•	•	•		
	Inventory Control	Manage receipt, dispatch and storage of merchandise, and monitor and maintain stock control to oversee the purchase of stocks for production effectively		•	•	•			
	Learning and Development	Manage employees' learning and development activities to maximise employee' potential and capabilities to contribute to the organisation				•	•		
	Merchandise Buying	Design and implement merchandise buying plans according to market and consumer trends, merchandise ranges, stock levels and sources of supply			•	•			
	Project Management	Execute projects by managing stakeholder engagement, resources, budgets and resolving problems			•	•	•		
	Stakeholder Management	Manage stakeholder expectations and needs by aligning those with requirements and objectives of the organisation. This involves planning of actions to effectively communicate with, negotiate with and influence stakeholders		•	•	•	•		
	Strategy Planning	Develop organisational strategies and policies by analysing the impact of internal and external influencing factors and seeking consultation from relevant stakeholders				•	•		
	Vendor Management	Manage vendor relationships by ensuring performance as per contracts, operations within standards established by the organisation such as adherence to safety, security, and compliance standards			•	•	•		
	Workflow Digitalisation	Apply digitalisation to enhance efficiency and effectiveness of operational workflows, processes and practices				•	•		

# Overview of Technical Skills and Competencies

#### Technical Skills and Competencies (TSCs)

TSC Category	TSC Name	TSC Description		Pro	roficiency Levels				
150 Gategory			1	2	3	4	5	6	
Design	Aesthetic and Design Sensibility	Imagine and develop novel, relevant and appropriate aesthetics to engage and evoke accurate and appropriate emotional and sensorial responses from target audiences			•	•	•		
	Building Information Modelling Application	Use Building Information Modelling (BIM) software to make design, engineering, project and operational information accurate, accessible and actionable for engineering projects			•	•	•		
	Cultural, Heritage and Socio-economic Sensitivity for Design	Develop appreciation and thorough understanding of cultural, heritage and social-economic aspects of landscape sites and their associated communities to reflect considerations of such sensitivities in design			•	•	•		
	Design Creation and Development	Utilise relevant design approaches for the conceptualisation, development and enhancement of design solutions			•	•	•		
	Design Sketching	Communicate and visualise ideas and designs in accurate form, perspective and proportion through drawing			•	•	•		
	Design Standards and Specification	Apply knowledge of relevant standards that govern the design requirements, and deliver design specifications according to the required standards			•	•	•		
	Design Thinking Practice	Manage design thinking methodologies and processes to solve specific challenges for the organisation, and guide stakeholders through the phases of inspiration, empathy, ideation and implementation			•	•	•		
	Digital and Physical Prototyping	Construct design concepts, either digitally or physically, to develop deeper understanding of the designs and test their usability and functionality			•	•	•		
	Form Giving	Giving ideas and/or designs tangible forms and aesthetics, with consideration for function, emotions, technology, culture and organisational values			•	•	•		
	Imagination and Exploration	Utilise imagination and design exploration techniques across multiple disciplines to envision better outcomes and develop possible and relevant solutions			•	•	•		
	Material Studies and Production Processes	Administer the study of the properties and applications of materials to facilitate production, construction, engineering and processing of materials into specific designs			•	•	•		
	Placemaking and Programming of Open Spaces	Adopt a multi-faceted approach to the planning, design and management of open spaces				•	•		
	Sustainable Landscape Design	Incorporate considerations for sustainability, safety and maintainability in the design of landscapes			•	•	•		
	Technical Drawing	Manage the composition of precise and detailed drawings that visually communicate how designs function, or are produced, to guide the construction			•	•	•		
	Visual Communication	Design visual communication output to elicit emotional connections and responses from target audience			•	•	•		

# Overview of Technical Skills and Competencies

### Technical Skills and Competencies (TSCs)

TSC Category TSC Name		TSC Description		Pro	ficien	cy Lev	vels	
150 Category	150 Maine			2	3	4	5	6
Environment	Biophilic Design	Design landscapes with the objective of increasing user engagement with nature						
	Ecology in Landscapes	Adopt principles of ecology in the design, implementation and management of landscapes						
	Environment Management in Landscape Operations	Develop and execute plans to manage the adverse impact of landscape operations on the environment						
	Microclimate in Landscape Design	Incorporate considerations for thermal comfort and microclimate in the planning and design of urban areas						
	Water Sensitive Urban Design	Incorporate considerations for optimal utilisation of natural water resources in the planning and design of urban areas						
Floristry	Flower Arrangement	Execute flower arrangements for various occasions		•	•	•		
	Flower Harvesting and Handling	Harvest flowers and foliage in a nursery for sale or use in a project		•	•	•		
Horticulture	Horticultural Chemical Usage	Manage the safe use of chemicals and biological agents for horticultural works		•	•	•		
	Horticultural Maintenance Programme	Establish scope, develop plans for, and implement horticultural maintenance programmes			•	•		
	Landscape Irrigation Management	Perform and manage efficient watering and/or irrigation activities for the growth of plants	•	•	•	•	•	
	Plant Health Management and Disease Control	Manage plant health through developing and implementing programmes aimed at meeting nutrition requirements, and remediating pests, diseases and invasive species	•	•	•	•	•	
	Plant Identification	Identify, classify and document plant species for a variety of horticultural purposes	•	•	•	•		
	Plant Pruning	Execute routine and contingency pruning of plants for the purpose of maintenance, aesthetics or mitigating defects, decays or diseases	•	•	•	•		
	Plant Selection for Landscape Development	Select plants and trees to meet the requirements of a landscape project			•	•	•	
	Soil and Media Assessment and Remediation	Identify, test and improve soil and media quality to meet planting requirements	•	•	•	•		
	Turf Maintenance	Assess, plan and execute maintenance of amenities or public turfs	•	•	•	•		
	Vegetation Planting	Plan, execute and manage the planting of vegetation for a range of horticultural purposes	•	•	•			

# Overview of Technical Skills and Competencies

### Technical Skills and Competencies (TSCs)

TSC Category TSC Name TSC Description		TSC Description	Proficiency Levels					
150 Gategory	130 Name	150 bescription	1	2	3	4	5	6
Landscape Engineering	Automation of Landscape Operations	Adopt and incorporate automation technology within landscape operations to improve productivity, efficiency and effectiveness		•	•	•	•	
	Landscape Drainage Management	Manage drainage systems as part of landscape implementation and maintenance	•	•	•	•		
	Landscape Tools, Equipment and Machinery Management	Manage the safe and effective use of tools, equipment and machinery in landscape operations	•	•	•	•		
	Skyrise Greenery Design and Implementation	Design and install skyrise greenery systems in built-up areas			•	•	•	
	Skyrise Greenery Maintenance	Plan and execute the maintenance of skyrise greenery	•	•	•	•		
	Water Features Management	Manage water features as part of new or existing landscapes		•	•	•		
Landscape Implementation	Plants and Materials Procurement for Landscape Projects	Plan and execute the procurement of plants, trees and other materials for landscape projects			•	•		
Nursery Management	Display Creation and Management	Conceive, design and implement plant and merchandise displays to enhance their visibility and promote nursery sales	•	•	•	•		
	Nursery Operations Management	Manage business and operational performance aspects of a nursery			•	•	•	
	Plant Propagation and Production	Propagate plants using a variety of propagation means to support plant production activities	•	•	•	•		
Safety	Hazards and Risk Control, and Policy Management	Ensure a systematic and objective approach for hazards identification and risk assessment to effectively manage the hazards that may occur within the workplace		•	•	•		
	Incident and Accident Investigation	Investigate workplace safety and health incidents and accidents based on root cause analysis and identification of corrective actions to prevent recurrences		•	•	•	•	
	Work at Heights	Maintain Workplace Safety and Health (WSH) standards and practices when working at heights by establishing safety protocols and complying with regulatory and other Work at Height (WAH) and WSH requirements	•		•			
	Workplace Safety and Health Policy Development	Develop organisational workplace safety and health policies to ensure compliance with national regulations pertaining to the marine and offshore sector by applying knowledge of regulations and staying abreast of regulatory changes and practices				•	•	•

# Overview of Technical Skills and Competencies

### General Descriptors for Technical Skills and Competencies (TSCs)

Level	<b>Responsibility</b> (Degree of supervision and accountabiity)	Autonomy (Degree of decision- making)	Complexity (Degree of difficulty of situations and tasks)	Knowledge and Abilities (Required to support work as described under Responsibility, Autonomy and Complexity)
6	Accountable for significant area of work, strategy or	Empower to chart direction and practices within	Complex	<ul> <li>Synthesise knowledge issues in a field of work and the interface between different fields, and create new forms of knowledge</li> </ul>
	overall direction	and outside of work (including professional field/ community), to achieve/ exceed work		<ul> <li>Employ advanced skills, to solve critical problems and formulate new structures, and/or to redefine existing knowledge or professional practice</li> </ul>
		results		<ul> <li>Demonstrate exemplary ability to innovate, and formulate ideas and structures</li> </ul>
5	Accountable for achieving assigned objectives, decisions made by self and	Provide leadership to achieve desired work results; Manage resources, set	Complex	<ul> <li>Evaluate factual and advanced conceptual knowledge within a field of work, involving critical understanding of theories and principles</li> </ul>
	others	milestones and drive work		<ul> <li>Select and apply an advanced range of cognitive and technical skills, demonstrating mastery and innovation, to devise solutions to solve complex and unpredictable problems in a specialised field of work</li> </ul>
				<ul> <li>Manage and drive complex work activities</li> </ul>
4	Work under broad direction Hold accountability	Exercise judgment; Adapt and influence to achieve work	Less routine	<ul> <li>Evaluate and develop factual and conceptual knowledge within a field of work</li> </ul>
	for performance of self and others	performance		<ul> <li>Select and apply a range of cognitive and technical skills to solve non-routine/ abstract problems</li> </ul>
				<ul> <li>Manage work activities which may be unpredictable</li> </ul>
				• Facilitate the implementation of innovation
3	Work under broad direction May hold some accountability for	Use discretion in identifying and responding to issues, work with others and	Less routine	<ul> <li>Apply relevant procedural and conceptual knowledge, and skills to perform differentiated work activities and manage changes</li> </ul>
	performance of others, in addition to self	contribute to work performance		<ul> <li>Able to collaborate with others to identify value-adding opportunities</li> </ul>
2	Work with some supervision	Use limited discretion in resolving issues	Routine	<ul> <li>Understand and apply factual and procedural knowledge in a field of work</li> </ul>
	Accountable for a broader set of tasks assigned	or enquiries. Work without frequently looking to others for guidance		<ul> <li>Apply basic cognitive and technical skills to carry out defined tasks and to solve routine problems using simple procedures and tools</li> </ul>
				• Present ideas and improve work
1	Work under direct	Minimal discretion	Routine	Recall factual and procedural knowledge
	supervision Accountable for tasks	required. Expected to seek guidance		<ul> <li>Apply basic skills to carry out defined tasks</li> </ul>
	assigned			<ul> <li>Identify opportunities for minor adjustments to work tasks</li> </ul>

# Overview of Generic Skills and Competencies

### Generic Skills and Competencies (GSCs)

050			<b>Proficiency Levels</b>	
GSC	GSC Description	Basic	Intermediate	Advanced
Communication	Convey and exchange thoughts, ideas and information effectively through various mediums and approaches.	Communicate information with others to respond to general inquiries and to obtain specific information.	Articulate and discuss ideas and persuade others to achieve common outcomes.	Negotiate with others to address issues and achieve mutual consensus.
Computational Thinking	Develop and use computational models, tools and techniques to interpret and understand data, solve problems and guide decision-making.	Use computational models, tools and techniques to identify patterns in a problem and develop a solution.	Modify existing computational models, tools and techniques to develop different solutions.	Develop and create computational models, tools and techniques to implement new solutions and apply to other problems.
Creative Thinking	Adopt a fresh perspective to combine ideas or information in new ways and make connections between seemingly unrelated fields to create new ideas and applications.	Connect ideas or information from related fields or applications to address an immediate issue.	Connect or combine ideas or information from unrelated fields or applications to generate multiple ideas to bring about a specific outcome.	Create original applications or ideas to reveal new possibilities and reshape goals through high level of innovativeness.
Decision Making	Choose a course of action from various alternatives using a reasoned process to achieve intended goals.	Make decisions of simple or routine nature to achieve intended goals using given information and guidelines.	Make decisions in a complex setting to achieve intended goals using a structured process and multiple sources of available information.	Make decisions in a volatile and ambiguous setting using a structured process and limited sources of available information to achieve intended goals.
Developing People	Help others to learn and develop their capabilities to enhance their performance and achieve personal or professional goals.	Use demonstration and explanation to teach a familiar task to inexperienced co- workers.	Provide coaching to others to develop their skills and knowledge on their jobs to enhance performance.	Provide mentorship to help others in their professional and personal development to improve performance and further their careers.
Digital Literacy	Use ICT tools, equipment and software to create, evaluate and share information digitally with others.	Perform basic functions using software programmes pertaining to computer operating systems and file management, and search online information.	Use available software features to create and edit documents, customise templates and reports and evaluate online information.	Use available software features to enhance documents, analyse and manipulate data, and use ICT to organise, share and communicate information clearly and coherently.
Global Mindset	Awareness of diversity across global cultures and markets. Seek opportunities to adopt successful practices and ideas.	Demonstrate understanding of global challenges and opportunities and how to transfer best practices across cultures. Respect cultural differences and needs of a diverse workforce.	Develop global networks and manage virtual relationships while balancing both local and global perspectives. Adopt a local and global perspective when making decisions.	Build the organisation's capabilities to compete in a global environment. Manage tension between corporate requirements, global and cultural differences.

## Overview of Generic Skills and Competencies

### Generic Skills and Competencies (GSCs)

			<b>Proficiency Levels</b>	
GSC	GSC Description	Basic	Intermediate	Advanced
Interpersonal Skills	Manage relationships efficiently and communicate with others effectively to achieve mutual consensus and outcomes.	Recognise own internal feelings and emotional states to manage interpersonal relationships in social situations.	Detect and decipher emotions of others to manage interpersonal relationships in social situations.	Influence, guide and handle others' emotions to build instrumental relationships and manage conflicts and disagreements.
Leadership	Lead others to achieve objectives in the most effective way. Provide an inclusive workplace that cultivates workplace relationships and teamwork, and foster the development of others.	Demonstrate professionalism to set a good example at peer level. Support others through own initiative and enthuse others through own positive and energetic approach.	Lead by example at team level. Encourage and guide others to adopt a point of view, make changes or take action. Provide a team environment that facilitates relationships building, teamwork and the development of others.	Lead by example at organisational level. Inspire, motivate and guide others to adopt a point of view, make changes or take action. Cultivate an open, cooperative and collaborative learning culture for the organisation.
Lifelong Learning	Seek out opportunities to enhance one's knowledge and skills. Access and acquire new knowledge and skills actively for continual learning.	Organise and manage own learning by setting learning targets. Identify learning approaches to achieve work or career goals.	Engage in collaborative learning by discussing one's learning with others and soliciting feedback to continually improve oneself.	Conduct self-reflective practices to review one's learning to facilitate continual growth in one's career or profession.
Managing Diversity	Work well with people from different ethnic, social, cultural and educational backgrounds and understand the concerns and interests of diverse work groups.	Demonstrate sensitivity to the cultural characteristics, values, beliefs, and behaviors of another ethnic or cultural group.	Build relationships with different ethnic or cultural groups by engaging in cross- cultural cooperative projects.	Manage conflicts arising from different ethnic or cultural groups and work effectively in cross-cultural settings.
Problem Solving	Generate feasible and efficient solutions to solve problems and capitalise on new opportunities.	Identify easily perceivable problems and follow given guidelines and procedures to solve the problems.	Identify less perceivable problems and use problem solving tools and techniques to solve the problems.	Anticipate potential problems beyond the current scope and apply higher order problem solving tools and techniques to turn problems into opportunities.
Resource Management	Efficient and effective deployment and allocation of resources when and where they are needed. Include planning, allocating and scheduling of resources to tasks, which typically include manpower, machines, money and materials.	Use resources to ensure optimum and efficient use of resources.	Deepen insights into the planning, allocation and deployment of resources to anticipate needs. Plan the allocation and deployment of resources efficiently and effectively.	Establish strategies for the allocation and deployment of resources efficiently and effectively.

# Overview of Generic Skills and Competencies

### Generic Skills and Competencies (GSCs)

050		Proficiency Levels				
GSC	GSC Description	Basic	Intermediate	Advanced		
Sense Making	Organise and analyse data and information accurately to identify relationships and detect patterns and trends to gain insights for decision-making.	Identify relationships and linkages within different components of data.	Interpret data to uncover patterns and trends between various sources of data.	Analyse data relationships, patterns and trends to gain important insights and make informed decisions.		
Service Orientation	Commit to exceeding both internal and external customers' needs. Proactively identify customer needs and sustain a culture of service excellence within the organisation.	Exceed customer needs and expectations and handle service challenges with a positive mindset. Demonstrate an understanding of the organisation's service vision, mission and values.	Anticipate customer needs and expectations and elicit feedback from customers to improve service. Build relationships with customers to create and sustain customer loyalty.	Model, lead, train and motivate staff with a focus on sustaining a culture that encourages commitment to service excellence and high performance.		
Teamwork	Work collaboratively and effectively with others to contribute to group efforts to achieve identified objectives.	Contribute to a positive and cooperative working environment by fulfilling own responsibilities and providing support to co- workers to achieve team goals.	Facilitate work team activities, provide assistance and support needed by team members and promote ownership and commitment among team members to work goals to improve team performance.	Establish teams, design and assess tasks to continually improve team effectiveness and cultivate a sense of organisational ownership and a cooperative working environment.		
Transdisciplinary Thinking	Understanding of concepts across multiple disciplines, with the capacity to synthesise the knowledge and insights to guide decisions and foster cooperation.	Research and adapt concepts from outside one's field of expertise to supplement one's core knowledge and proficiency.	Co-relate material from diverse knowledge bases to guide decisions and policy making. Participate in reflective and trans-disciplinary communities within and outside the organisation.	Synthesise knowledge and insights across disciplinary boundaries to aid strategic decisions and foster cooperation within and outside of the organisation.		
Virtual Collaboration	Use online collaborative communication tools to work as teams to accomplish tasks or projects.	Participate and contribute in a virtual team. Set up appropriate online collaborative tools and supporting equipment.	Use interactive collaborative tools to foster cohesion and commitment among virtual team members to achieve goals. Keep up- to-date with innovative online collaborative tools and applications to enhance one's proficiency in engaging in virtual collaboration.	Leverage on diverse team talent, latest online collaborative technologies and virtual platforms to produce collaborative behaviour and achieve technological savviness in virtual collaboration.		

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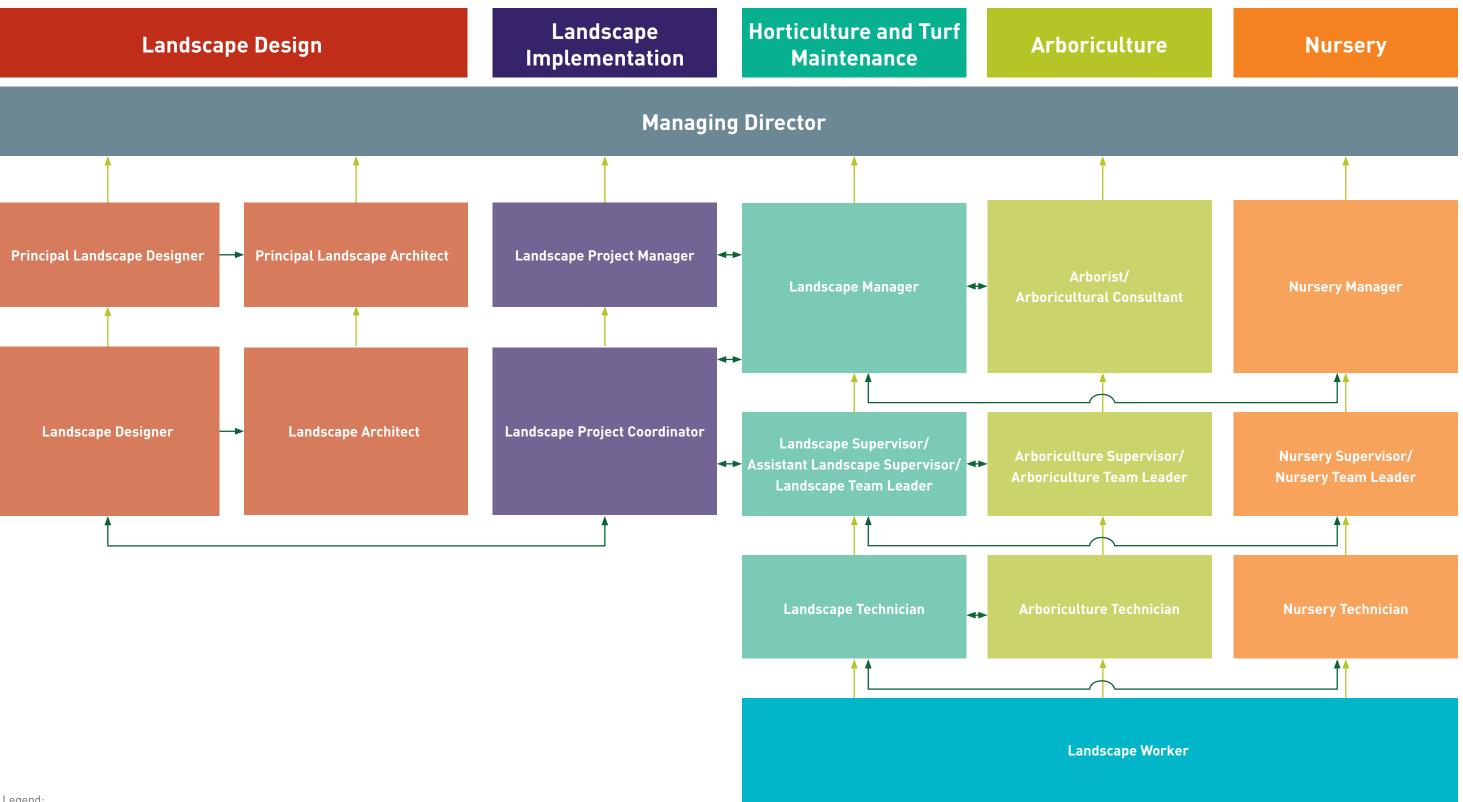
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### Wage Information

	Monthly Basic Wage				
Job Roles	25th Percentile (\$)	75th Percentile (\$)			
Landscape Design					
Landscape Designer	2,750	4,686			
Landscape Architect	3,050	4,834			
Principal Landscape Architect/Principal Landscape Designer	6,486	13,420			
Landscape Implementation					
Landscape Project Coordinator	1,400	3,200			
Landscape Project Manager	1,741	4,641			
Horticulture and Turf Maintenance					
Landscape Worker	1,292	1,500			
Landscape/Nursery/Arboriculture Technician	1,424	1,600			
Landscape Supervisor/Assistant Landscape Supervisor/Landscape Team Leader	2,176	3,040			
Landscape Manager	3,315	5,066			
Arboriculture					
Landscape/Nursery/Arboriculture Technician	1,424	1,600			
Arboriculture Supervisor/Arboriculture Team Leader	2,400	3,500			
Arborist/Arboricultural Consultant	3,500	4,427			
Nursery					
Landscape/Nursery/Arboriculture Technician	1,424	1,600			
Nursery Supervisor/ Nursery Team Leader	2,036	2,375			
Nursery Manager	3,175	5,200			
Managing Director	3,875	11,903			

Source: Wage Survey conducted by Willis Towers Watson for the Landscape sector as commissioned by SkillsFuture Singapore. \*The above data reflects indicative monthly basic salary and excludes overtime pay and allowances. Actual salaries may differ due to market conditions and company/organisation policies.







aspiration, as well as company needs.

### **SKILLS FRAMEWORK FOR LANDSCAPE**

### **Career Pathways**

Lateral Progression within the same functional track and/or cross-functional tracks

Note: The Career Map serves as a reference to reflect the available job roles and possible career pathways in the Landscape sector, which may vary depending on each company's structure and business context. The career progression pathways would depend on individual performance, capability, experience,