The Association of Professional Landscapers

worldskillsuk excellence at work

Landscaping

Technical Handbook

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We thank all the amazing sponsors that make this competition possible:

Overview

Landscaping, often referred to as gardening, is that and so much more. The modern landscaper must have an understanding of topography, construction, carpentry, lighting, plumbing and procurement. The competition will train you to be able to pave, construct wooden structures and gain knowledge of horticulture. Applicants should have some understanding in all these disciplines but most of all an enthusiasm and willingness to learn.

The industry has a broad range of landscaping roles. Anything connected with green spaces and their environment will involve a landscaper, and the roles include Hard Landscaping, Soft Landscape and Maintenance, Design and even consultancy.

A Hard Landscaper involves working with hard materials such as patios, paths and driveways. It could also involve installation of garden buildings, pergolas, fencing, walls, retainers and raised beds. You can either be self-employed, or a site operative working your way towards foreman and even manager.

A Soft Landscaper and maintenance/gardener involve the softer elements of landscaping which includes the cultivation and preparation of ground and soil, laying turf, sowing seed, positioning and planting of plants, trees and shrubs, providing aftercare. Again, you can either be self-employed, or a site operative working your way towards foreman and even manager.

A Designer brings together creative flair and problem solving. Landscape/garden designers are responsible for measuring sites, producing scale plans, artist's impressions for changing the landscape, and, producing tenders for construction. Designers tend to be self-employed but there are some larger practices or landscape companies that employee designers.

A Landscape consultant are roles for the technically minded. Roles include site surveying, materials and budget estimation, consultation, soil analysis, agronomists, designing and installing irrigation.

The competition has been designed to reflect the standards and skills that are required to be a skilled/semi-skilled landscaper in today's landscape industry. We hope this guide will provide you with a clear path to follow, from initial registration to the National Finals and beyond.

The Competition

This competition consists of:

Pre-Competition Activity stage – the pre-competition activity is an activity detailed below designed to give you information on what the competition entails, some exercises that you can have a go at completing, and some valuable resources where you can find more information about the landscape industry. It is vital you prepare in advance.

Passive stage – during the registration period all registrants will compete in a passive stage which will be delivered remotely/online, details of which will be provided by the competition organising partner. We have included an example of a passive test below.

National Qualifiers – successful competitors from the passive stage will be invited to progress to the qualifiers which take place in Spring/Summer 2022, at either your local college, training provider or employer premises.

National Final – the top scoring (8) competitors from the qualifiers will be invited to participate at the National Final (LIVE).

Resources

For information and resources, including how to register, competition rules, and the steps to competing, visit:
https://www.worldskillsuk.org/competitions/landscape-gardening/

Pre-Competition Activity

The Pre-Competition activity is designed as a taster activity to help competitors to prepare themselves for the competition.

The Pre-Competition Activity Task is outlined below:

One area where competitors have historically lost marks in competition is with the

hand saw. Cutting a mitre joint may seem easy, but to perfect it and do it quickly is an art.

As part of your pre competition activity, practice cutting mitre joints, learn to understand internal and external measurements.

For the exercise you could complete 8 mitres to create a small box frame. Your external measurement should be 500mm.

Step 1 – Measure and Mark Timber

Before we start cutting, the first job is to measure and mark the exact cutting position on our piece of timber

The best route to take is to always measure, mark and cut from the internal point of the joint and not the external.

One other point to think about is where you actually put your mark – have you marked your pencil point directly on the point you need to cut or have you put the mark to the left or right of your measurement?

This is an important point to consider as if you mark your pencil line directly on the cutting point, meaning the cutting point is at the centre of your pencil line then you will need to make sure that you cut through the middle of the pencil line.

Likewise, if you put your pencil mark to the left or the right of your cutting point, you will need to make your cut to the left or right of the mark.

There's no real right or wrong method of marking, just make sure you know exactly where you have put your mark in relation to where you need to cut. Even a fraction of a millimetre off and there will be a gap in the joint that will stand out a mile off.

Additionally, you should also be aware of the width of the saw blade itself and how much timber material it will remove.

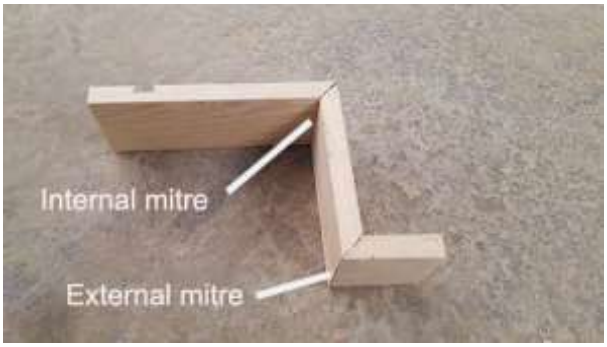
The width of the channel that a saw blade creates is known as the "kerf" and how wide this channel is depends on the width of the blade itself, how much the blade moves as you saw through and also the set of the teeth on the blade.

This will vary depending on the type of saw you're using and the type of saw, so the best way to find out is to cut down through a piece of waste timber and then measure it.

You will then also need to take this into consideration when marking.

Remember, for your frame you would measure the external length of each section and cut the wood to that exact length and then cut a 45° mitre cut at each end.

There are also internal and external mitres.



Think about this as you construct the frame.

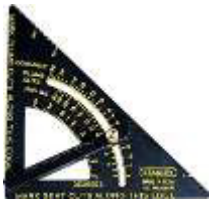
Step 2 – Cutting your Mitre.

There are several methods used to cut the mitre joint with a hand saw.

1. Many handsaws come with a mitre slot on the handle of the saw. By placing the handle against the wood, the blade creates a 45 degree angle that can be marked and cut along to form the mitre.
2. Mitre Block. A mitre block is a plastic, metal or wooden box used together with a hand saw to cut wood at preset angles. It's more precise than cutting wood freehand, because the slots prevent the saw from moving sideways as you work. Remember to clamp down the mitre block. You will not be able to hold the mitre block steady and produce a cut at the same time

3. Using a square. There are 3 types of square that can be used. Combination square, Speed square and a Tri square. In landscaping, combination and speed square are the most commonly used.

Combination



Speed

Step 3 - Using your handsaw.

- Place the saw's teeth that are closer to the handle at the cutline on the far edge of the board.
- Use the tip of your thumb that isn't holding the saw to keep the blade steady and in position along the cutline.
- Draw the saw toward you with a short motion to make a small notch or groove in the edge.
- Lift the saw and reposition it into the groove. Make another short stroke with light force to deepen your starting cut.
- After a couple of back cuts, continue cutting with forward and back motion to work the saw along the cutline on the board face.
- Use long, easy strokes so all of the teeth can cut.
- Let the saw do the work. Don't grip to tightly and don't use too much force.
- Near the end of the cut, shorten your strokes and increase the cutting angle for a clean finish.
- If you veer away from the cutline, stop sawing. Remove the blade and begin cutting again where you got off track.

What will the Mitre Look like

Once you have done your measuring and done your cuts, what should a 45 degree mitre look like.

Poor Mitre Finish

Excellent Finish

So have a go at building your square frame, using the tips above. Fix your mitres with a screw or wood glue to hold in place.

Project specifications (Passive Stage example)

The passive stage of the competition is designed to assess your ability to do/achieve certain tasks and to establish your commitment to competition.

This passive stage example is an online assessment to test your ability to get the details you need to build a project off a plan.

This skill in todays landscaper is vital, being able to procure materials accurately and reduce wastage are key elements in preserving your profit margin.

Being able to do this quickly and accurately will be a huge benefit either to your own business or your employers.

Projects are designed to test competitor's technical ability to:

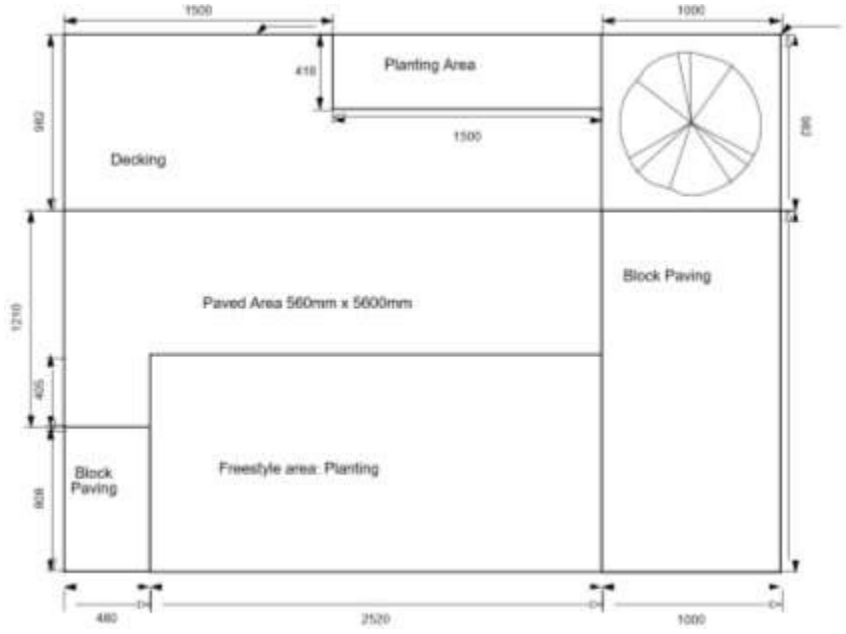
- take details of a design
- calculate areas and work out materials
- calculate Costs
- deliver a price for the project.

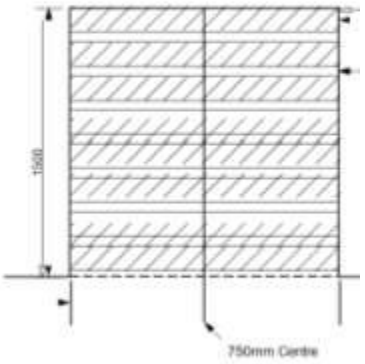
Project overview

Included features	Optional features
-Calculate area of Decking -Calculate area of Block Paving -Calculate area Paving -Calculate areas of Planting -Calculate Costs -Apply Margin and submit a total	-Calculate man hours to complete project.

Project example: Passive test example

Design specification	
Material	Online email
Time	Should not take any longer than 1.5hrs
Additional data	• Drawing is not to scale • All measurements are present • Top Right corner is raised sleeper bed, 3 high on the flat. • Fence is gravel board, equally spaced.





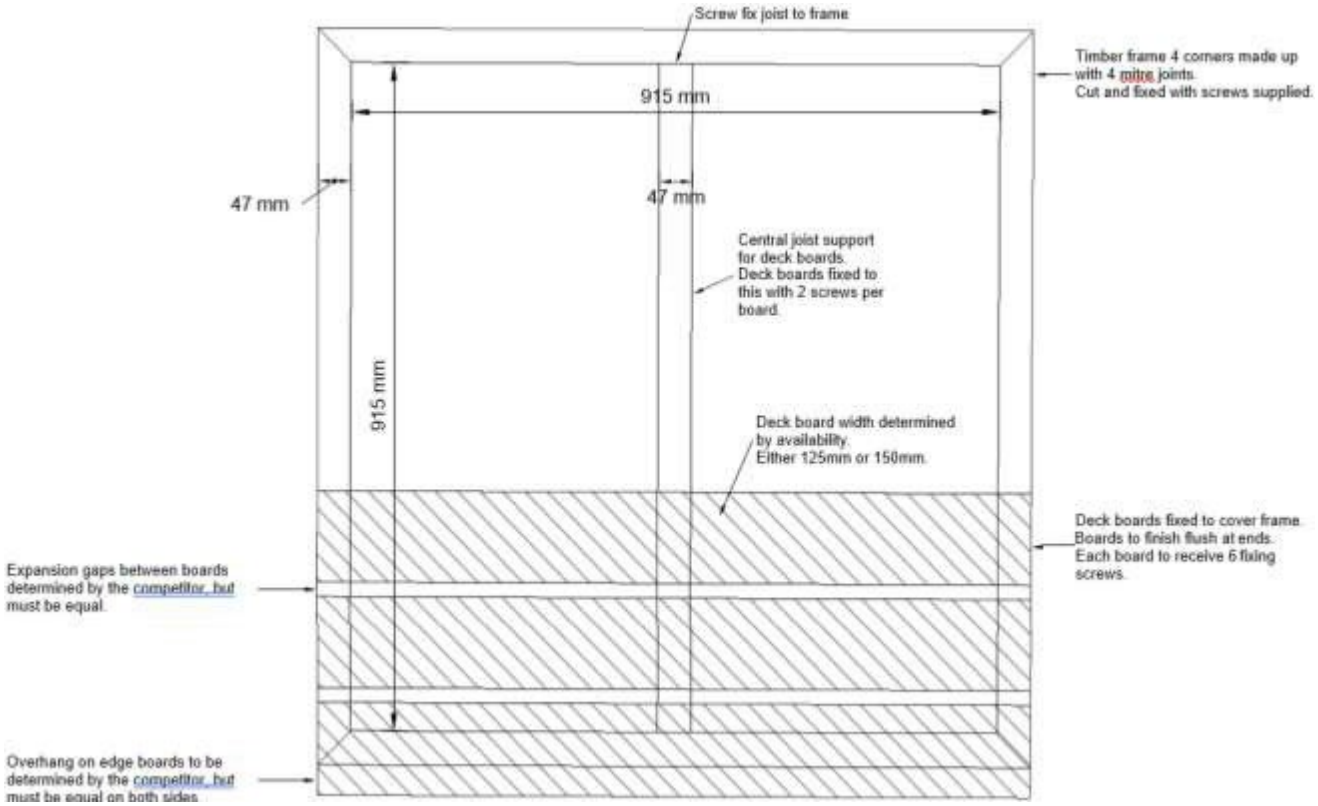
See extra guidance below.

	A	B	C	D	E	F	G	H	I
1	**Project Overview and materials list**								
2	The attached project is a test piece, but the aim is for us to see if you can translate the detail that is on the drawing in to a bill of quantites and then provide an accurate price for doing the job. There are areas in the project where you will be able to make accurate assessments, but some will be provided by us.. eg sand and cemet, Type 1, screws and jointing sands/compounds. These will be the same for all. We would like you to provide the amounts and costs of all materials as (Stage 1). Then apply a margin of 30% (Stage 2). Then a figure on the amount of time it would take you to complete (Stage 3) Finally (Stage 4) give APL a full cost including labour to do the job.								
3									
4	Bill of Materials								
5	**You should assume the area is site ready and all dig out has been completed correctly**								
6	Description				Quantity			Cost/Unit	Total
7	**Fence**								
8	Fence Posts 2400 x 75 x 75 Treated							10.5 each	
9	Fence Boards (Gravel Board 22 x 150 x 3000)							10 each	
10	**Deck (£150 has been used for Geotextile and**								£150.00
11	Joist Timber 100 x 50 C24							3.10 / m	
12	Posts and noggins use as above also for posts in							3.10 / m	
13	Decking Boards 29 x 124 x 3000							8.22 each	
14	**Raised Border**								
15	Sleepers 2400 x 200 x 100 Treated set on the flat edge 3 high.							32.3 each	
16	Assume soil for planting areas has been from dig out. Post for raised border calculated in Posts and Noggins.							FOC	£0.00
17	**Ground works**								
18	Type 1 MOT @ 75mm depth				1 Tonne			50/tonne	
19	**Paving**								
20	Mortar (Sand and Cemet)				Rounded Up			50 total	£50.00
21	Paving 560 x 560 x 22 Callibrated Sandstone							32/m2	
22	Jointing Compound				Included with Paving			F.O.C	£0.00
23	**Block Paving**								
24	Sharp Sand @ 50mm				.5 Tonne			50/tonne	
25	Block Pavers 200x 100 x 50							25/m2	
26	Jointing Sand				1 bag			5 / bag	
27	**Planting areas to be completed with 5lt plants at a rate of 3/m2. Large area should have 1 small tree**								
28	Plants								
29	Tree for planting area 10lt							30 each	
30	Tree for raised area 50lt							150 each	
31	Plants 5lt							6.5 each	
32	Mulch				1 bulk bag			120	£120.00
33						Grand Total Materials			£320.00

Full sheet is supplied on application. Pass mark is 60% explanation of marking schemes below.

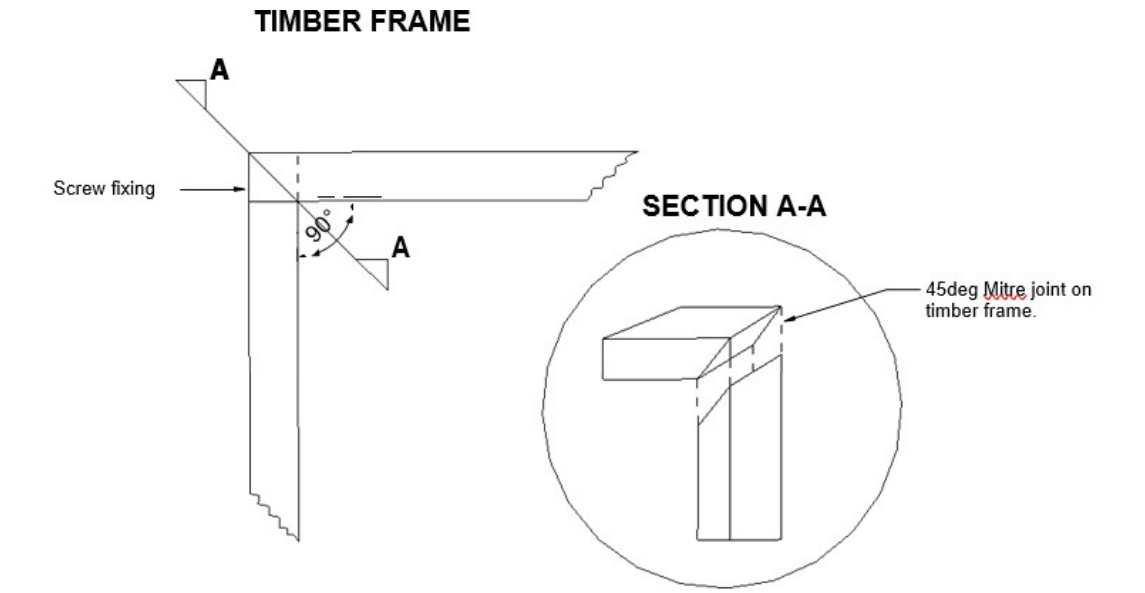
Project example: National Qualifiers

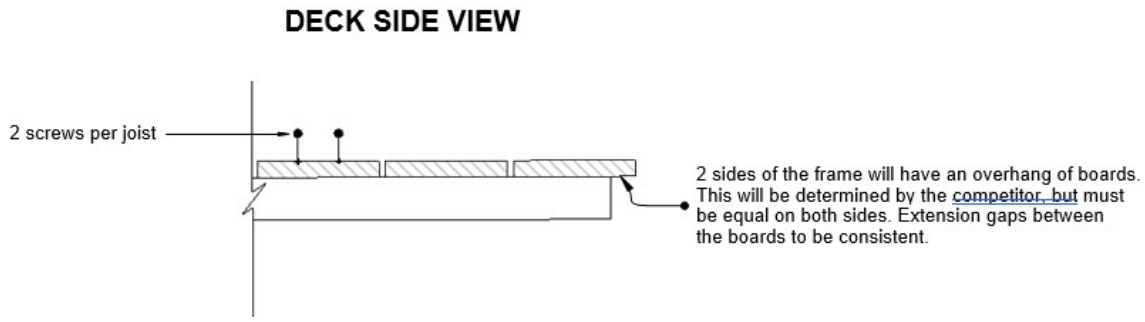
Design specification	
Materials	Timber, 50mm x 100mm. Decking boards, Grit/ Sharp Sand, Block Paving. Screws and Kiln dried sand.
Time	4 hours
Additional data	• Where possible all tools to be provided by competitors. • All cuts will be made by hand saws and block splitters only. • Marking is done against drawings and within mm tolerances. • A plant ID will also form part of this qualifier



Not to Scale

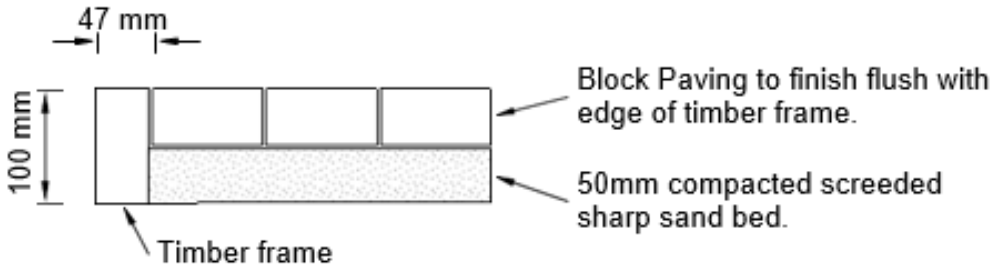
Project example: National Qualifiers drawings continued…





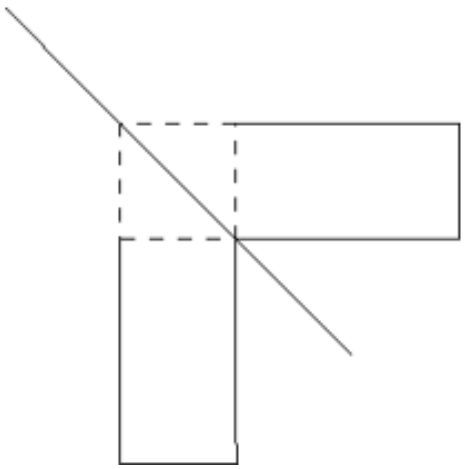
Project example: National Qualifiers drawings continued…

Block Paving and Timber Frame section



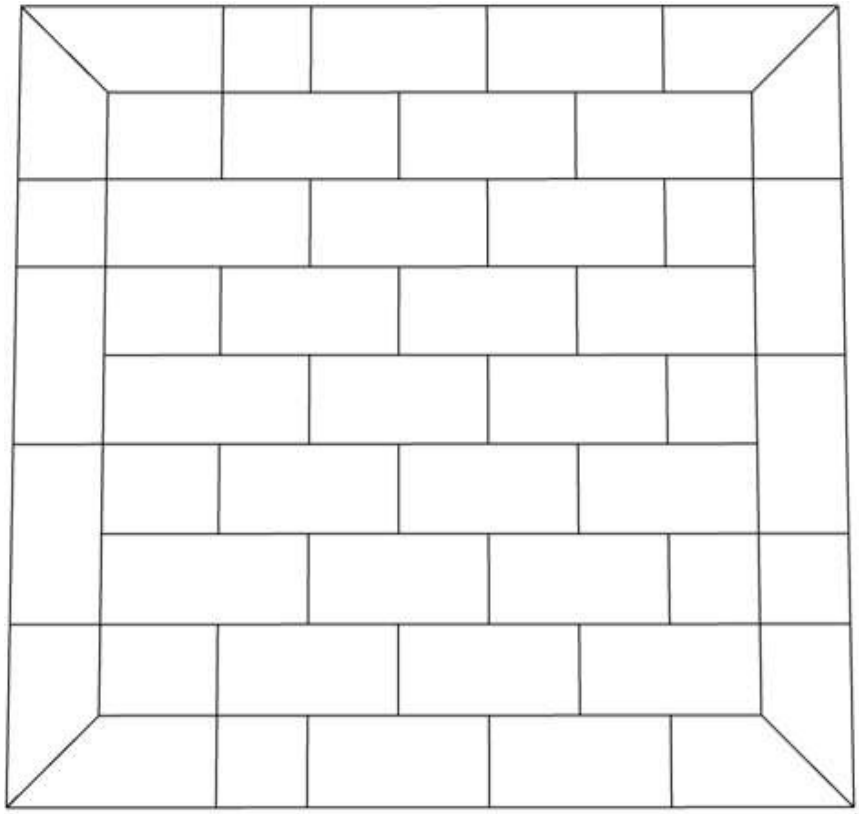
NB jointing sand to be brushed into paving on completion

Block Paving Mitre



To create a simple 45deg mitre.
- Place one block over the other at a 90deg angle.
- Score your line.
- Use a Block Splitter to create a 45deg cut.

Project example: National Qualifiers drawings continued…



Block Paving

Suggested pattern based on blocks 200mm x 100mm

Suggested Block Pave Pattern. Not to Scale

Project examples: WorldSkills UK Final (this could change in layout and detail)

Materials	Paving, Decking, Fencing, Planting, Lighting, Water Features and Raised Planters.
Time	16.5 hours
Additional data	• Where possible all tools to be provided by competitors. • All cuts will be made by hand saws and block splitters only. • Marking is done against drawings and within mm tolerances. • A plant ID will also form part of this qualifier

This competition assesses the skills and abilities of competitors entering the field of Landscaping.

Whilst in appearance both examples look to be simple structures, they encompass all elements of today's modern landscaping.
Your projects are measured and judged within mm tolerances, your finish has to be clean and blemish free, the planting needs to be creative.
Add to this, you are an individual competitor and your 12m2 of landscaping has to be completed in just 16.5hrs, you can appreciate this is a challenge.

Marking scheme

The marking scheme is designed to fairly compare every competitor's work. Marking is split between measurement and judgement aspects.

Measurement

Any dimension on the drawing can be a measurement mark. Measurements and levels are marked to tolerances of between 2 and 5mm.

In some cases there are a range of marks:

Within tolerance (Full Marks) eg 3 points

- (±0-1.9mm) 2 points
- (±2.1-2.9mm) 1 point
- (±3mm) 0 points

Some marks are awarded on completion of tasks, these are simple Yes/No

All projects will be supplied with a mark summary form. The mark summary form will show only the number of marks assigned to each aspect, not the breakdown of marks (e.g., Decking Exercise: 40 marks maximum).

Judgement

Judgement marks are more subjective, for aspects such as:

- Health and Safety
- General Work Practices and Process
- Overall finish
- Competence on machinery
- Attitude

Judges will work to a judgement handbook with examples of each criterion. Each judge will reveal a value from zero to three, and an average will be taken. For example, if all judges assess the Health and safety as a two overall, the competitor will receive 66% of the possible marks. Judgement marking accounts for only 10% of the overall score.

Example of a score sheet.

The Association of Professional Landscapers
worldskillsuk Skills Competitions

Competition Marking Form – **Decking** - WorldSkills UK Landscaping Intermediate/Advanced – Heat 2020

Competitor Name/Number: .....

Venue: .....

Date: .....

Aspect ID	Description	Tolerance/ Requirement	Max Mark	Mark Awarded
1	Decking			
1:1	Frame Joint 1, 45degree mitre	0-1.9mm: 3 points 2mm-2.9mm: 2 points 3mm +: 0 points	3	
1:2	Frame Joint 1, 45degree mitre	0-1.9mm: 3 points 2mm-2.9mm: 2 points 3mm +: 0 points	3	
1:3	Frame Joint 1, 45degree mitre	0-1.9mm: 3 points 2mm-2.9mm: 2 points 3mm +: 0 points	3	
1:4	Frame Joint 1, 45degree mitre	0-1.9mm: 3 points 2mm-2.9mm: 2 points 3mm +: 0 points	3	
1:5	Frame (915mm)/(915mm) **Internal Measurement** This will be confirmed at start of heat depending on blocks supplied	0-1.9mm: 3 points 2-2.9mm: 2 points 3-4.9mm: 1 points 5mm+: 0 points	3	
1:6	Is frame square?	Yes/No No = 0 points	3	
1:7	Safe use of hand tools with correct PPE 3 strikes = 0 points.	Yes/No No = 0 points	3	
1:8	All Decking boards to finish flush on two external sides and be equal in length and sanded. Any overhang to equal on uncut sides	0-1.9mm: 4 points 2mm-2.9mm: 2 points 3mm +: 0 points	4	
1:9	Spacing between decking boards to be equal	+/-2mm Over tolerance = 0 points	3	
1:10	All screws to be in straight line (Minimum of 6 screws per board)	100% 3 60-99% 2 Under 60% 0 points	3	
1:11	All screws flush and evenly spaced (Minimum of 6 screws per board)	100% 3 60-99% 2 Under 60% 0 points	3	
1:12	Test piece complete	Yes/No No = 0 points	6	
			40	

Equipment

During training and delivery of the National finals, there is a range of equipment you will be required to use. If not used before training will be given on the familiarization period ahead of the finals:

Disc Cutter

Model EK6100 is a Power cutter 305mm (12") equipped with 61cm³ 2-stroke engine with stratified scavenging system to comply with all known exhaust emission regulations.

Compared with the predecessor model DPC6430, this new model has the following advantages:

- Lightweight; 1.2kg (2.6lbs) lighter than DPC6430
- Enhanced air filtration; cyclone pre-separation system effectively removes dust particles away from intake air and reduces dust stuck on the filter.

Chop Saw

TECHNICAL SPECIFICATIONS

Blade Diameter 260 mm Max mitre range 60 - 60 º Max mitre cut at 90º 68 x 310 mm Bore Diameter 30 mm Max bevel range 48 - 48 º Noise sound pressure 91 dB(A) Noise sound power 101 dB(A) Noise K factor 3 dB(A) Input Wattage 1510 w No Load Speed 3200 rpm Vibration K factor 1.5 m/sec² Vibration no load 2.5 m/sec² Net weight 26.3 kg. Link to product - www.makitauk.com

USER BENEFITS

• Built in laser guide. • Motor head slides on fixed pipes without extending machine at rear end, so the machine can be placed close to wall. • Front knob for easy bevel adjustment • Holders to support a wide workpiece • Easy-to-operate mitre angle lock • One-touch sliding lock • Large turn base • Connects to dust extractor • Electric brake • Soft start • Constant speed control • Double Insulation

Drilling

Technical info:

Capacity in Steel
13 mm
Capacity in Wood
38
Chuck Capacity
1.5 - 13 mm
No Load Speed (Hi)
0 - 1,900 rpm
No Load Speed (Lo)
0 - 500 rpm
Blows per Minute (Hi) - ipm
0 - 28,500 ipm
Blows per Minute (Lo) - ipm
0 - 7,500 ipm
Capacity in Masonry
13 mm
Voltage
18 v
Torque Settings
21 + drill
Battery Type

Lithium-ion
Vibration K factor
1.5 m/sec²
Noise sound pressure
82 dB(A)
Noise sound power
93 dB(A)
Noise K factor
3 dB(A)
Net weight
1.5 - 1.8 kg
Battery Quantity (5.0ah)
2
Max. Fastening Torque (Soft Joint)
27 Nm
Max. Fastening Torque (Hard Joint)
50 Nm
Vibration: Impact drilling into concrete
8.0 m/sec²
Vibration: Drilling into metal
2.5 m/sec²

National Finals

What to expect

In previous years, the National finals were a huge largescale event, usually taking place at the NEC, Birmingham. There were many skills in diverse sectors, so you had to be prepared to do a lot of walking in potentially crowded areas and your family, friends, and other visitors would try to get the best views of intense competitions going on.

Employers were able to enter the competition floor with the permission of the competition manager; and take sponsorship photos or gain a better understanding of the competition itself. Competitors were also expected to wear the appropriate H&S equipment (e.g., safety boots, glasses) while competing.

The competition stand will be prepared with all the equipment necessary to compete. Each competitor will be provided with an individual toolkit and drill set. Some other tools such as disk cutter, chop saws and mixers will be shared. Usage of these items will be explained during familiarization session and monitored throughout the competition.

Top Tips from Judges

The judging at the WorldSkills UK National Finals is critical. Judging has to be fair and transparent, but most of all needs to be delivered by Industry experts. The judges for this competition have been in place for many years, here are some top tips from them.

1. You are always sent the plans and information required for your competition ahead of the date. MAKE sure you read them and if you have any questions ask the organising partner, employer or tutor to explain.
2. Practice, Practice, Practice.
3. The first afternoon of the competition is familiarization. This will be your first time at the show. Use this time wisely, look at your allotted plot and

make sure you are happy with the set up. Look at the tools and materials you have been given and if you are not sure about anything.. ASK. Familiarise yourself with your surroundings, toilets, food areas etc.. The judges will go through all this with you.

4. Make a plan. Look at the task ahead of you and schedule your works over the allotted time. Feel free to share this plan with a judge, who will be able to advise you if it is suitable.
5. Think on your feet. There are some operations where the machinery is limited, so if there is a queue, don't stop and wait, start another part of the project until the queue has gone.
6. If things are going slightly wrong..DON'T PANIC. There are regular breaks in the competition where you will be able to discuss things with your tutors or peers, but also it's a time that you can re look at your plans and re work areas. Don't forget to adjust your schedule.
7. Always look at the schedule at the end of every day, see where you are and where you need to be. If falling behind, it could be that you need to increase the pace for a session, or it may be that you decide one element of the project. Work Smart.
8. It's a tough competition both mentally and physically, but the sense of achievement at the end is unique. So make sure you work hard, fast and accurately. But most of all enjoy the process.

Beyond the National Finals

Looking beyond the National Finals, there are a host of opportunities for competitors. Age-eligible competitors who show the highest skills, passion, and drive to compete will be invited to train for the EuroSkills and WorldSkills international competitions.

Those who are not eligible for international competitions may join the Champions programme, which allows continued involvement, including the opportunity to work with WorldSkills UK and visit schools, colleges, and events to inspire the next generations.

Alternatively, if training is of interest to you, you could consider supporting WorldSkills UK with organising and training, and even helping to run the National finals.

Get inspired and you could become part of Team UK!

Useful Links and resources

There are many useful links for competitors to practice with:

www.landscaper.org.uk The Association of professional landscapers. Join the APL here as a student member and get invites to industry focused meetings on Zoom plus regular email e-shots.

https://www.landscapelibrary.co.uk/ The landscape library is a fantastic resource for Landscapers, Gardeners and Designers. Created and populated by the founder of the APL it has a reduced student membership of £25/year or free for 1 year if a member of the APL.

https://www.pavingexpert.com/ On this site, you'll find professional, impartial information from an ex-contractor, with construction guides and specifications to all the most popular British and Irish paving types.

https://deckingnetwork.com/ The fastest growing free network of all things Decking to include photos, forum, blogs, news, information, advice and how to's. This is the hub for the largest gathering of people that share the same interest – and that's Decking

https://www.chooselandscape.org/ There are opportunities in landscape for all sorts of people. Whether you're a natural socialiser or an introvert, a creative type or a science geek, you'll find a career you love. To succeed in any landscape job, you'll need to be motivated by making the world a better place – for people and the environment.

https://www.golandscape.co.uk/ GoLandscape, an education, skills and careers initiative, designed to inform and inspire new recruits and combat industry issues, including a severe skills shortage.