CONSTRUCTION OF THE DRESSAGE ARENA WHILE SAVING THOUSANDS $$$$$

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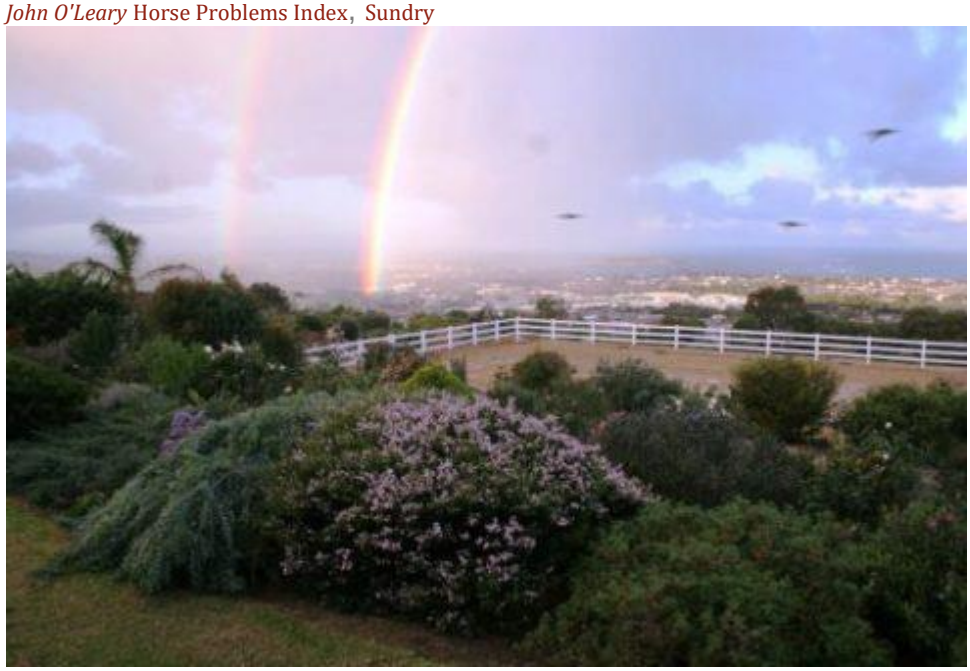
John O'Leary Horse Problems Index, Sundry



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This article is taken from experience, not from books etc. It is written to save you money. Like thousands I have done the 'hard yards' so hope this will benefit you.

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A LETTER

Hi there,
I'm in Tassie we are getting quotes for a 60 x 20m arena.
We are at the confused point with several quotes all around the same price with very different things in them.
The area for the arena needs building up at one end and cutting out at the other.
Would appreciate some advice on what is what… below are the quotes and some info we have received so far….
Quote 1:
Includes: Excavator hire
Bobcat hire
Roller Hire
Truck Hire
Ash
FCR
20mm clean metal
240m 90 slotted pipe
Sock for 90mm pipe 240m of
Geo cloth top of drainage trenches
With sand $26 818 (Including GST)
(Ok background… this bloke came recommended … but they all seem too! he wanted to put drainage around the outside … underneath and the 3 levels of base).
Quote 2:
Excavate marked out area to form levels
Supply & lay ag drain on top side of arena
Supply & lay 100mm road base, grade and level surface
Supply & lay 100mm red gravel, grade and level surface
Roll & compact surface in preparation for arena sand
Supply & lay arena sand grade and level surface
$23 880 (Including GST)

(Highly recommended and has done arenas at our local state equestrian centre.. the best ones according to coaches… sand he quoted was a cheaper sort more likely to blow away so I need to check up with him whether its washed river sand.. he said it was an arena mix sand but just not as heavy as some people have windy areas… we are quite sheltered where we are)
Quote 3:
Removal of 4 large trees
20 tonne excavator hire 40 hours $6400
Bob cat hire 16hours $1200
Roller hire 24hours $1312
4 tonne excavator hire 24hours $1880
Supply of Culvert pipe x1 $350
sub total $12256.20 (including GST)
Sub base gravel 152m3 @ 100mm thick before compaction $4864
Crushed red gravel 152m3 @ 100mm thick before compaction $4864
APPROX TOTAL QUOTE 3: $26984.20
(Told Sand approx $6000 but he was still waiting to hear back at this stage, I presume removal of trees is included in the previous quotes but this is a point I will be confirming)
I tried to get 4 quotes but never heard back from one despite much "nagging" so gave up. I have several more numbers I can call for additional quotes but am keen to make start before Chrissy.
Best Wishes
Thank you for your time,
Sophia TASMANIA

QUOTES

Never get quotes for the whole construction of an arena for it will cost you much money and you will lose all opportunity to save Thousands, which this article will do for you.
You should basically be sub contracting your own arena and selecting the Machinery based on your on going investigations of your own Terrain and Land.
Now look at the quotes above and compare them against my Work last Week at my new Home, which all up cost me $880 and was finished in 3.5 Hours.

SIZES OF ARENA

The Olympic Size and preferred by serious Horse Trainers of the English persuasion, is 60 x 20 Metres. The alternative and used by those with lack of Room and many in the EU for Indoor facilities, is 40x 20 Metres.

SELECTION OF EQUIPMENT

and knowing your Terrain and Soil.

You never know what is under the surface so the Golden Rule is to always get the Big Machinery in. Stay away from 'BobCats' I own a new Bobcat and it won't be used on this arena. This is what I recommend.

First get in a Big Grader, equipped with a Laser Leveling device. Just in case it can do the Lot. This may do the entire job inside 3 Hours but if not, you will then know what you are Dealing with. The money won't be wasted.
Then, if needed due to Rock being too solid like reef, get one of these.
There isn't much that that the Large Bull Dozers can't sort out fast as they come with Rippers and as you see on my arena, can even dig out these.

but you will soon know, like in 15 minutes, if you are the unluckiest People on the Planet, if Rock is too prolific for the Bull Dozer.
Straight away then you will go to the 8 or 12, Tonne Excavator or bigger.

not this. That will shift most everything but if the Rock is so bad and you so insistent, this machine can put on a Rock Breaker attachment and break the

rock up first. Highly unlikely though in most cases.

So in 3.5 Hours, including a Grader and then the Bull Dozer and a total of $880, I have this, ready for a base.
…
Not this

BOBCATS
There is mine.

Waste of time other than landscaping after and tricking up. Get the Trucks to Run the Gravel out and let the Grader do the rest with the Laser Level.

BASE

So then you are ready for a Base. I never worry about two types of bases as you will read lower and I put a much thicker base down than all of these quotes. I can afford it because I go for the cheapest and roughest Road Base possible as it all goes down like Rock.

I don't get Rollers in either. The Earth Moving Machinery and Trucks do most of that anyway. Then water and my F Truck if I need.


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Just to prove that a Base can be any sized aggregate ☺ here is my latest site, for me new round pen. Over this will go 20mm doll rubble, then Sand. Dirt (clean fill) over the edge to hide the view and for Planting and you can guarantee no bogging ☺

FILL OR CUT

I always go for fill, it is cheaper but sometimes you have to Cut, like my current Site. I cut down to Bed Rock but still needed to raise one end and one side to match the levels. So Fill was searched for and today we got it.

.6 DEGREE SIDEWAYS AND 1 DEGREE LONG WAYS

Now I could have a Front end Loader or even a Bobcat to spread these heaps as they are soft and east but tomorrow, the Grader comes in and will not only knock that over but keep the levels right, ending with a decision as to whether we need extra Truck loads fill or if we have enough for you never want too much.

DRAINS

I am dead against DRAINS. Particularly drains on the Hillside end of an arena but both are a waste of time and money. They invariably catch Water and ensure the dampness of that side of your arena. To put a Drain on the lower side of an arena is just silly. You are always better off listening to Nature and allowing Water to run off away down Hill in the same manner as it did throughout History. That is what the Water Table likes.

I do not have drains on the other side below this Batter.

MOSQUITOES

Wherever Water lays, Mosquitoes Breed. These in turn bring great risk to your Horses and especially these Days, Ross River Virus, Hendra Virus, Murray Valley Encephalitis and more, can all be passed on via these insects. Yet another reason not to have Drains around the Place. Incidentally, Water Tanks around Horse Stables should all have a desert spoon of Kerosene on top of them!

THE BASE

The base is the most important part of any arena or Round Pen. Mostly, people think or get told that they have to put down the most expensive blue metal, normally 20 dol rubble, but this is not the case.

It does not matter what stone or rubble you use as your base and it also doesn't matter how rough it is or how large the rocks are really. I have built magnificent arenas that have had rocks up to 300mm in truck loads of gravel but it all goes down flat when driven over, graded or rolled. You can therefore go to the Quarry and by the reject rubble for a fraction of the

cost.

One of the arenas that I have at the moment was in fact built totally for free by using my experience as a Heavy Dozer driver in another life. You too can do this. Go to your nearest subdivision and look for the building site that has hit limestone, shale or similar. Approach the truck driver and he will almost tear

your arm off to accept the offer of you taking the approximate 300 tones that comes out of an average house site if on a slope. Beneath my show jumping arena are rocks the size of small cars in fact. Limestone goes down beautifully and sets like a rock. (pardon the pun)

Recycled bitumen. Watch your local Highways Dept crew. When they dig up a road, ask for the bitumen. It goes down fantastically. Never mind the big bits. It does not matter at all.

Milling machine loading crushing asphalt into dump truck during repairing road works

The thickness of an arena base should never be less than 150mm but preferably 300mm. If you are on flat ground, you can have the base as thick as you like and you should lift the arena up as high as possible. Then you can have the top shaped to each side in a slight dome for water run off in every direction.

On flat ground and dryer areas that are not prone to flooding, shell grit can be used as a base and a surface as it forms its own base and goes hard beneath the surface. This is why it needs harrowing from time to time. Not to be attempted in a high rainfall area though.

Shell Grit, whilst making a fantastic base whilst riding on it, is better being later covered with Sand for every time you pick up manure, you will kill your Plants and paddocks with the Salt Content. I prefer Sand, for Paddock improvement when the Manure is composted and for Riding on.

**Remember, it is harder on Horses though and any Manure picked up off it kills Plants!

FINES

Alternatives for a Sub Base, say over rough rock, ashphalt, shale or whatever else You find, are dolomite fines, 20mm rubble with plenty of fines in it to make it go down hard like cement.
In some cases, a sub base is not necessary at all. If the Bull Dozer finds a base of say SHALE, or LIMESTONE, or BLUESTONE or other, you may not even need a Base (providing the arena base is above ground level and will drain.
Here shows the use of fines, even purposely mixed into the Sand to stop Wind.

DRAINAGE

This is the most important consideration and the base is the most important part of that. You must have a fall and that should slope away to where your water drainage direction will be. There should be ideally about 1% fall. As I said

above, if on flat ground, the arena must be lifted and domed slightly by the grader when preparing for the surface.

Arena Builders love Plastic agricultural drainage pipes that can be installed beneath the arena and run out each side but I have not had much success with them. They block up. A total waste of money. Nothing beats a proper, naturally draining arena. 1 degree in two directions. Across from side to side and one way from end end on the diagonal to the lowest point of your Land.

One must take into account the relevant water and drainage regulations for your area and a lot of constructions must not be within certain distances from water courses.

Watch these Council 'wet behind the Ears University Trained Morons' who know nothing. They now are measuring Banks and if found to be 43 Degrees, will make you redo it and cost a squillion.

Agricultural Drains cause more trouble than they are worth!! and cost money. You don't need them

Remember, if the base is good and the fall is correct, the water runs off OVER THE TOP of the base, NOT THROUGH IT.

SURFACE

There are many:

Wood Chips are dangerous, white ants love them, they rot, get water logged, do not drain and horses fall on such arenas regularly. Don't ever use one! It does not matter if they are hard wood or soft wood. Hardwood are dangerous on the legs of the horse due to splintering.

Shell grit is quite expensive but good. More dusty than sand and also more sun glare. Shell grit should be harrowed at least once a month, to stop it packing down and causing leg problems with horses.

I prefer the right sand. You can get darker colours which do not reflect, it is softer on horses legs, more so than shell grit. It does not pack down like shell grit does and doesn't need harrowing as much. The sand that you choose must be washed enough that it does not have a high clay content otherwise it will not drain.

Quartzite sand is sand crushed fine from rock. The most water resistant of all

but expensive and more abrasive on horses stoppers etc. It is also tougher on the Legs of Horses

Shredded rubber. Very hot if outside, nice to ride on but I am not a fan.

Winery castings of the grape bunches. The woody sections. Again, cheap, soft but rot and not a nice look.

Custom made surfaces include sand, sawdust, salt, woodchip and all kinds of combinations. Mainly used for indoors and are all ok. Soft, less dusty etc. Advice should be taken on that one.

There was a fashion of having a carpet liner beneath an arena. Didn't work so don't try it.

Find your local sandy suburb. Every time you see a truck driving out of that suburb, run him off the road, and….. If it is sand, "follow me" Carton of Beer later and he is yours ☺

Want lawn around your arena? Follow the trucks. City folk are always getting rid of lawn and with it comes their topsoil at $100 per tonne for free. Yay.

THE SURROUND

The retaining timber, to keep the surface from falling out of the arena, can be all manner of things. Popular is the timber called 'Permapine' and usually they are 2.4 metres x 300mm x 50mm. Looks lovely, lasts a reasonable amount of time but I am not a fan of the product. Horses eat it if they get near it, I have seen white ants in it and it cracks and weathers far worse than the other treated pine called 'Creosote' That is stronger, white ants don't like it and horses don't eat it. Wear gloves and eye protection.

Creosote timber as the permapine above
Leave small gaps for water to drain or drill with an inch Bit.
Dry stone walls. Here again, watch your building sites. I got 500 tone of it out of one site. It was valued at $85 per tone. Truckies have to pay stupid prices to get rid of anything with rock in it. (see the photo's and weap)

Brick walls which should have cement and rounded curves or a rounded brick

on top for safety of horses.
Large logs made out of tree trunks or telephone poles……and so on.

THE FENCE
I suppose money dictates this but whatever you use, it is a good idea to put your posts in at an angle of about 5 degree to the outside. This will stop a rider having their legs hit on the rails if the horse gets too close, which is often the case. Just make up a wooden template which you use with a spirit level held against the post and so you get the same angle on the post each time. Looks good then.
Heavy rope.
Borderline Plastic wire. (It is not wire and there is no wire in it. Do not put any strand closer than 750mm from the ground. Two strands is ok. I would have 3, set at 300mm apart from the top.
The height should be approx 1.2m from surface to top of post.
Place the rails on the inside of the posts for safety.
Counter sink the bolt heads inside the inside of the posts with the nuts on the outside of the arena.
Creosote rails and post look fantastic and have the benefits as explained above. You cannot paint it though.
White painted hardwood is find with Hardwood Posts or permapine.
Galvanized square tube 50mm is good too or whatever suits you really. Minimum 2.5mm wall thickness though. 100 x 50mm. Hedges make great Fences…here is one of mine…
And it can be other things of course…..


Horseproblems Australia - Hedge Planting


Horseproblems Australia - Hedge Planting

SHOULD THEY BE FENCES?
Most certainly they should. For the following reasons:
Risk Management.
Negligence at Law
The Training of the Horse
The replication of Show conditions
To ride your corners well
and the Fence is handy for training…like Leg Yielding.

SLOPES
It is amazing how much earth moving work you will have to do if you start dealing with slopes. A slight hill could cause the removal of up to 3 metres cut into the hill to level you off. This costs plenty. Rather than attempt this, allow your local trucks to dump clean fill and fill up the low area. Strike a deal with them that they knock it over for you after, which they all will as it saves them at least $3 per tone in dumping costs and up to $700 per truck load if there are any rocks over 90cm in the load, as dictated by the 'Rock Police' at your local dump. Normally named Barney Rubble.
It does not really matter what is in those loads either as it all goes down and rock is good not bad. Organize your fall going away from the hill. I have seen arenas built with the fall to the hill and a drain cut around the hill side and it has been a disaster. The entire arena had to be re-done.

Remember that the fall should only be ever so slight otherwise it will detrimentally effect your riding and your water run off will happen too quickly and therefore take sand with it in a heavy rain. You only want water trickling across an arena. From memory, I think it is about 1 degree that you are after.

COVERAGE
Base: 60 x 20 metre arena……150 tone
Base 40 x 20 metre arena……..100 tone

SAND SURFACE
between 100mm to 150mm depending on Sand, which differs in all Districts. (Must be well washed with low Clay content. Water must run out below the sand and over hte base. Get a Bucket of Sand, create a hole with your hands and fill with water. The water must not Pool and stay, it must run through, preferably like the Beach.
Beach Sand or Sand Hills has a High Salt content which dries Hooves and kills surrounding plants and grass. Same with Shellgrit.
60 x 20 metre ……150 cubic metres
40 x 20 metre…….100 cubic metres
There is between 8 and 9 cubic metres in a 15 tone truck.

THE GATE
Due to litigation these days, the arena should be fenced if other people are going to be riding in it. It also should have a gate and that should be sited in a location to allow tractors and trucks to enter in the future. The gate should not be obvious to horses as this can give learner riders' problems in the future
RE-CYCLED CONCRETE
This is fine but has it's dangers. It doesn't weld together and go down hard. There is always a danger of it mixing in your top surface.


Roundyard Base 1-1.jpg (1008 x 756)

So go ahead and use it for sure but put another base over it, like one of the rubble's or fines.

ASHPHALT FOR ARENA BASE

Hi John & Linda,
Looking forward to catching up with Linda and the gorgeous Cappo on your next visit to Joyce's ..
Finally got the other half going to put in an arena. Had to compromise the size and go for 20x 40mtr, I suppose it's better than I have now which is nothing lol.

I have attached a pic of intended site for arena, orange hats and run along the fence line. Plan of having a wooden post and rail fence and ground border 200mm high, will also have shade cloth run along the wire boundary fence and entry point this end.
In relation to the base I have been investigating around the local area and I may have come across an asphalt road being ripped in the next few weeks.
My question is? Would this asphalt be suitable for a base? I have been told it will be smaller pieces, I assume that I would need 100 tonne as per your constructing a dressage arena information.
Although it's tinder dry here, believe it or not the front of the property does hold water near power poles along the front near the trees. The intended arena site does not flood, it has only a 3 degree slope from the driveway to front, so just want to make sure we construct it correctly.
Appreciate your feedback
Cheers
Kim

Ashphalt is fine PROVIDING IT HAS ANOTHER 100mm of a road base or fines over it. It is not fine without that for the it starts to come up into the Sand.

AGGREGATE BENEATH SAND SURFACE

I have had emails from a lot of people lately regarding being advised to place 300mm of large aggregate (rock 50mm) beneath the sand surface. This is a waste of a couple of thousand dollars and the horse will eventually dig the stone into your sand. City Folk The 50mm or the 20ml gravel, never welds together into a surface and always retains looseness. Therefore, a waste of money for both. 20 dolomite rubble however, same sized aggregate though, is different. The fines and every other size, goes down like bitumen and creates a surface beneath your surface. The hoof may dent it but you won't suffer the damage of pure aggregate mixing up with your sand. So either rough as guts road base or the flash '20 dol Rubble' or equivalent. I prefer the Road Base.

click on photo's to enlarge

New Stable Site with Fill

All Rock out of a House Site at Spring Hill ( )

Our Dressage Arena

Show Jump Arena Retainer Wall holding fill. All rock from a house site. Silly Boy, he went and purchased bricks hahaha

ROADWAYS

Once again, scour your Housing Development Sites until you find where they have hit rock, shale or limestone. The heavier rock can go below, the shale second and the limestone on top. Then you only need 50mm of 20 dol rubble or 20mm gravel and you have it.

If you are cutting a road in around a hill face, do not cut it so that the water falls back towards the hill and runs along between the road the the hill face as a drain. Cut the fall sideways with about 2 degrees fall to over the edge of the hill. This also saves you the time, expense and on-going cleaning of the under road water culverts.

Domed roads look nice. They do not work like the sideways falling cut when hills are involved.

So in my opinion, no arena should cost more than $15,000 and mine cost $15,000. (paying for Earth Movers)

Just finished. 7/7/11

$125,000 Project. Cost $15,000.

ANOTHER ONE OF MINE
Free Rocks off a House Site of a City Person ☺
beneath this arena is 20 Truck Loads of Rocks the size of Mini Minors.
another one of ours
This one is built higher than the ground with a drain down the left and far sides.
INDOOR ARENA see lower on Page

LETTERS
Dear Sir,
We found your very informative website on Google, and wondered if you could lend your expert opinion on the problem we our having with our new arena. It was intended to be an all-weather arena (40 x 20m) suitable for dressage and jumping.
We engaged an experienced contractor, who specializes in just horse arenas, and claims to have built about 50 of them, including some very large arenas.
Our arena has just been finished – it took almost a year to finish, mainly due to continued rainfall.
We typically get over 2 metres of rain a year here (in New Zealand), which the constructor was well aware of.
The arena base is slightly raised above the surrounding land, and a clay base was created.
We understand that a slope was created, so that the water would drain in one direction (to one side).
Then large stones/aggregate was laid over that (not sure what depth), then a layer of 'crusher dust' was put over that.
No heavy rollers were used, only a traxcavator, which we questioned at the time.
No drainage pipes were used within the arena surface, only around two sides, to collect and take away the water.
The other two sides drain straight into a natural culvert that runs through our land.
We have had EQ2 equestrian sand laid on top, about 60 tonnes/80 cubic metres.
It had only been down a week and we had to call the contractor back as the horses were 'double slipping', we think due to the variable sand depth and loose base. He came back with a tractor and levelled out the sand, and said 'the base is as hard as it's going to get'.
If you remove the sand you can dig up the crusher dust layer with your foot.
We have had some rain here over the last couple of days (over 20mm) and the surface is now flooded.
The sand is like porridge to walk on.
We have spoken to our contractor and he is telling us that we are expecting miracles i.e. for an all-weather arena to drain, and actually be usable in wet

weather!
You see, we are just silly Brits who emigrated to NZ about 20 months ago.
My wife competes, trains horses, teaches and has ridden on more arenas than our contractor has built (but not here in NZ).
Please see attached photos of our sad-looking 'all-weather arena'.
Our land is such that this arena is the only place my wife (Debbie) can ride.
Wev'e had our two horses over a year and they have hardly been ridden, so you can imagine her disappointment.
Any help or suggestions you can offer will be greatly appreciated.
Regards,
Andy
Poor you Andy. I would think silly New Zealander rather than silly Brits ☺ He is supposed to be the expert and he has basically built you a Dam in the lowest part of your property and then you have fenced it in ☹
I am afraid you are in a pickle. A serious one. If my property, I would be re-locating the arena completely but you probably cannot. You therefore only have one option. Get rid of the blue stuff and replace it with at least 600mm of Heavy Road Base Rubble, as rough as guts (pardon my uncouth Australian talk in front of the Brits ☺ and it it had stones up to 300mm in it I would be pleased. It has to be then rolled. NO FINES ON TOP, just the sand. Then your water should flow beneath the sand and off the arena but that Fence down to ground level in that location is causing an entrapment of the water. Agricultural Pipes DO NOT WORK.!!!!!!! That is City Slicker stuff. In that location and with that amount of rainfall, tell me where Agricultural Pipes are going to take the Water hahahaa. Best of Luck. My sympathies. I suspect your wife may have influenced the location??? If neither of you did, you may have a case against him for an experienced and Local Contractor armed with Local Knowledge should have known that this would not and could not work.
INDOOR ARENA.
Hi Lyn. Normally, deep prints means nothing as Sand is supposed to do this. There are deep prints all over our arena right now. However, Sand Dunes may be your problems, which is highly unusual during these times of environmental controls. (No clay content at all)
I spoke to a Friend who has done a lot of research on this as they have an Indoor. Here is what they say.
Hey John,
Just been out checking poo for sand, after treating Indy and Cav the new horse. No joy yet, when should I start to see any sand? At the moment it looks good. Regarding your New Zealand enquiry, dune sand is just full of silica and as you know this does not absorb any water it just runs off, she doesn't say how deep it is, but if the base has been done correctly I would remove all but 40mm of

the sand and add a water absorbing shaving or sawdust eg redgum or any equivalent. We are about to add soft fall to our arena as we have removed the excess of deep redgum shavings that had broken down to dust!!!! She probably should add some sand with some clay as well. It will have to be watered as with any arena indoor for dust suppression, and this is where she must have something that will provide water absorption without the slip. Not many people are happy with their arena surfaces, but many put down $20k surfaces of the textile one, and of course they are not going to bag it after spending that much money, or maybe a horse they have spent that much money on. He He.
If she does go for a wood additive, she must make sure it will not cause lung problems for horse or rider when constantly being dampened, and the chip or shaving needs to be smallish no great big lumps. As you know Rob has looked into a variety of surfaces and we feel they all have a major downfall. To top our arena in 40mm of soft fall will only cost me $1500 delivered by our lovely friends at Garden Grove. Any thoughts John let me know, my lightbulb is flashing on this constantly. Rubber gives headaches according to coaches, soiltex is expensive and very thick in the first year, and you can't tell me it would be emitting healthy breathing air with manmade products included in it.

I would add that HARDWOOD sawdust should be used NOT soft Wood. You would have plenty of that in New Zealand. Regards
Hi John, hope alls well in victor, I have a question regarding our arena, its so close to being finished and our excitement is huge We have a big issue with wind up here and I'm concerned as to how much is gonna blow away and wondered would it be safe to use tin fencing around bottom of arena fencing about 500 high or higher if better if it was capped so no sharp exposed edge ??? I also am trying to keep sheep out as I like them in the paddock at times as well for weed control. If this is not suitable can you suggest a cost effective way around it.
P.S any news with bella Regards Rachel
Absolutely not Rachael. Use nice looking light green shade cloth stretched and affixed along and up about 2 foot.
x

Hi John,
I have read your article on building a horse arena with interest. I am currently building mine. I wondered if you could offer me some advice?
I have so far built a 20 x 70 m pad built with a bulldozer (big trees and rocks needed to be moved) it is carved out of the side of a hill and slopes away from the hill with a open drain at the bottom of the batter to catch any water coming off the batter. The pad sits above the drain by about 200m on the batter side and about 1.5m on the fill side. It is made up of rocks and clay from about 10cm

in size down to fines.

I am in a quandary as to whether I need to use any sub base as the base that's that makes up the current pad could act as the sub base. I have a pile of similar material excavated from the house site thats been sitting there for about 4 years and was going to use that for the sub base but wondered whether there was much point putting more of the same stuff on the pad. The only difference might be that there would be less fines as they would have been washed from at least the surface of the pile. In your article you said you could use stone or rubble, limestone, shale or similar. But I wasn't sure whether clay rocks and fines are OK and whether the fines are OK. I have the same stuff on my driveway and it has set hard. It becomes a bit boggy where water and some clay sediment sits. Clearly good drainage is important and I have a quote for a grader to grade the arena pad so there is no spots where water can sit at all. However I dont want to find that when I have put the sand down that it really did need more rock or rock that was not clay.

So I guess my question is:
have you used or experienced arenas built with clay rock and fines for the sub base?

is there a proportion of rock to fines that should be used for the sub base? Or rather is there a proportion that shouldn't be used
Any help or advice you can offer would be greatly appreciated.
Cheers
Wendy

Yes Wendy, Clay content of any description is a No No!. Be very careful. Do a Puddle Test in a Bowl and see how the material reacts with water. I suspect as you said, it will go soft on top. That equals water retention.
The other thing I find puzzling. A drain at the lower side of the arena when it is already down hill that way. That is a typical City Slicker Earth Moving idea. Drains hold Water and stop water going away. Therefore, your arena on that side will never be as dry as if the moisture was just allowed to slide down the Hill, Why create more work and expense. Next he may want Pipes in there hahahaha. Regards
+++++++++
Hi John,
Just got some questions regarding my riding arena.
I had an area 25m x 65m levelled 6+ years ago. It is runs along the top of a slope. A large bull dozer and grader was used. They dug out one side and used that to build up the other side, all our natural, fine, dusty, light sandy soil. They

never found any hard base or rock, although the dug down 3 metres all they found was more sand!
Why would they dig down 3 Metres unless the Cut had to be so deep??? If they did it just in search of they are idiots.
At the time we were moving, renovating a house and had limited funds. All I wanted was a flat, dry area to ride. Drainage is excellent, I have never had water sitting on my arena, even after 100mm of rain. My arena has never been too wet to ride.
BUT My surface is too soft, everyone told me with time, weather, rain, it would pack back down and settle, but it hasn't. It's like riding in the soft sand at the beach. The horses sink in anywhere from 6 to 12 inches depending on how wet it is, size of horse, speed etc, there are holes from the horses hooves 6 – 12 inches deep. When riding we can't get balance, rythym as the surface is so uneven. My husband used to harrow it to even out the surface, that made it more uniformly soft but also dug up the sections that were starting to settle.
As this is our normal soil, we have been trying to grow grass on it to hold it together , we have some patches but this just adds to the inconsistent surface.
My arena is only used by my daughter and myself, probably up to 10 times per week. We do not have big, flash expensive horses but 4 little harder arabs, arab x's and are training up to max Medium dressage with my daughter jumping to 1m.
We can not afford to spend a lot of money. Usually we just float the horses down to the local PC grounds to practise our dressage but it's a pain to have an arena and it not be useable.
I was thinking that we probably need to have some of the surface removed, a firm base put down, then some heavier sand put on top.
Your opinion would be much appreciated.
Thanks Karen

The problems would arise due to not having base. It is rare to see an arena without a base that works well all of the time. Regards
++++++++++
Hi John,
I have some more 'therapy' for you.
I live in West Gippsland – 15 minutes up the road from Tonimbuk, where you held your recent Victorian clinic (which I really enjoyed and learned a lot from!)
I have 2 problems that I would like your advice on.
1st Problem
We have had enough rain here over the last couple of years to float the ark, and our new dream property (owned it for 3 years and very fast becoming more of a nightmare) has become very water logged – we are mostly on solid clay and I think we might be sitting on top of an underground lake!!!!!$@@$#$!. We are

struggling to keep our beautiful horses (3 Friesians and an OTT Thoroughbred) out of the muck. As it doesn't look like there is going to be any let up in the weather anytime soon, we are getting desperate. We have tried using sand (they call it a 'road base' type) in gateways and sheds but this is just getting trampled in. We have considered some of the new ground stabilising products – plastic type grids, but these are not cost effective and not very practical for large areas. We thought a 'pipe laying sand' might work better – this is slightly more granular with less fines (we've used it in our round yard) – but because of the terrain and the RAIN we think that this will just wash away. We are madly digging drains left, right and centre to try and give our horses a 'dry' place to stand but we seem to be fighting a losing battle. What other type of bases can we try? Unless we can find some way of at least giving our horses a couple of dry spots, agistment off the property will be our only option and this would be very difficult, logistically and financially for us.
Sell the property and buy a new one, or..
In such an area, Horses need to be at least Stabled during the Night, and…
fix some safe areas as you have been trying to do….or
Build some Yards to remove Horses off your Paddocks during Winter as your Property clearly cannot support such.
As you may have read in my two articles about the arena and the round pen Forget Pipes, forget all the other suggestions by new age Yuppy University Trained Salesmen, they won't work. Sand cannot work nor can the other things. Only ROAD BASE RUBBLE UP TO 300MM diameter. and at least 300mm above paddock level.
ARENA CONSTRUCTIONS PROBLEMS
Hi John I am hoping you can help solve a problem I have with my indoor arena .I live in the Noosa area Queensland 2 years ago my property was wiped out with the floods and it has taken me that long to get my property back to normal its been a hard long slog.Any how the last restoration is the indoor arena and I seem to be surrounded by idiots who claim they know what they are doing but so far its been a mess up.I thought the job would only take a week but so far its been 6.The story is the arena was an out door for many years (30) I put a roof on it everything was fine until the floods to cut a long story short I decided to get rid of the old sand because the stones from the road base had gone right through it was no good for the horses and whilst training I could feel underneath from the base that there pot holes forming.I got a bobcat in and had all the old sand removed the bobcat man didn't know what he was doing although he told me he knew what to do I guess you have herd it all before ?I feel the base is still good for something that was put down 30 years ago very solid of course the level is up and down but no one can tell me how to level it up with the existing base I need to know what base I can put down before the new

sand goes in.Every one seems to be so keen on crusher dust I don't like the idea maybe the crusher dust can go on top of the base once it is finished but I still don't like that idea the old sand has been sitting on the old base all this time so why wont it work the same again anyhow I would appreciate some advice you can give me because I'm at my wits end as to where to turn next these so called experts are driving me crazy sincerely Carol of Noosa
Hi Carol
I would think in Your area, the going over the existing base with ROAD BASE to level it and to LIFT THE HEIGHT for protection from water and water run off, would be smart. Then, once that is done (which will put You in no different position than you are now anyway,) You can assess how that Base went down and the likelihood or not of hooves getting through Your sand and mixing larger stones or not. Then you may decide on dolomite FINES which if mixed in, won't matter as some mix it in on purpose, to stop blowing. The key is the rolling nd watering. The Road base will be cheaper. Get a small Grader in with a Laser on it if possible and Bobcat to do the two ends where Grader may not be able to manoeuvre???? Small Grader. Regards
++++++++++
Hi there Mr and Mrs HP, Hope your both well. Do you have an opinion or advice please on Sand vs Shell Grit for yards ? I hate the dust of shell grit, will sand not be so dusty? My yards are on a slope, will I need to put a base down before I put in the sand or shell grit ? Thanks so much for your time, Anne.
Hi Anne.
We have had Shell Grit and won't use it again. It goes down too hard, it is too abrasive on Hooves, it dries them out more, it goes hard, it forms it's own base, it is expensive and it kills all Your Gardens and Paddocks after composting ☺ You always have to have bases on an arena but if you have an existing shell grit arena, that is the base. Regards
++++++++++
Hi I have been reading your articles on constructing an arena. Are you able to tell me what surface is best to use on a very sandy soil. Obviously we would get a top layer of soil taken off and levelled. Are you able to give me some advice on building with affordability also. Cheers Alli Madill
Hi Madill
If You surface is SAND, then You may get away with only leveling such and riding to see how you go. Make your decision later then.
However, if You are REMOVING Sand to LEVEL and You get down to some other type of material, that isn't suitable or will hold water, YOU MUST ALWAYS HAVE A BASE!!
Regards
++++++++++

Hi John
I've been reading your post about building arenas. After getting quotes between $45,000 to $75,00 we have decided to build it ourselves and are in the process of doing so. The paddock we are building it in is uneven so we are currently getting 250 tonne of clean fill delivered from a earthmover. My Dad has worked out levels with a dumpy level and once the base has been leveled I wanted to know what you're suggestions are of base and surface.
We are thinking:
– 300mm of 20 dol rubble leveled and rolled
– 150mm of sand
Is the 300mm of rubble enough to make a base?
Kind Regards

Hi Sian
The 20 mm rubble of course is the most expensive route and I would get Dad to scout around YOur District and see if there is any old rough roadbase material laying around, which would save you a lot.
Then……over the top of that, you would want 100mm of fines (here Dolomite fines), to save when the horse puts a hoof through the sand and may bring up a larger rock.
but if just sing the 20 dol rubble, there are two trains of thought. 100mm of fines over that as I said but in my case, I didn;t but you do get the odd up to 20mm stones through the sand (which doesn;t bother us) but the perfectionist Dressage Queens with their big Bank Accounts, have the fines over the 20 dol rubble as well
ok?
Beneath my show jumping arena, I have rocks off a Building Site and then the top 60mm is simple SHALE out of a building site.

Now….phew……having said all that, I hope the Hell You can ride, cause many can't. hahahahaha