



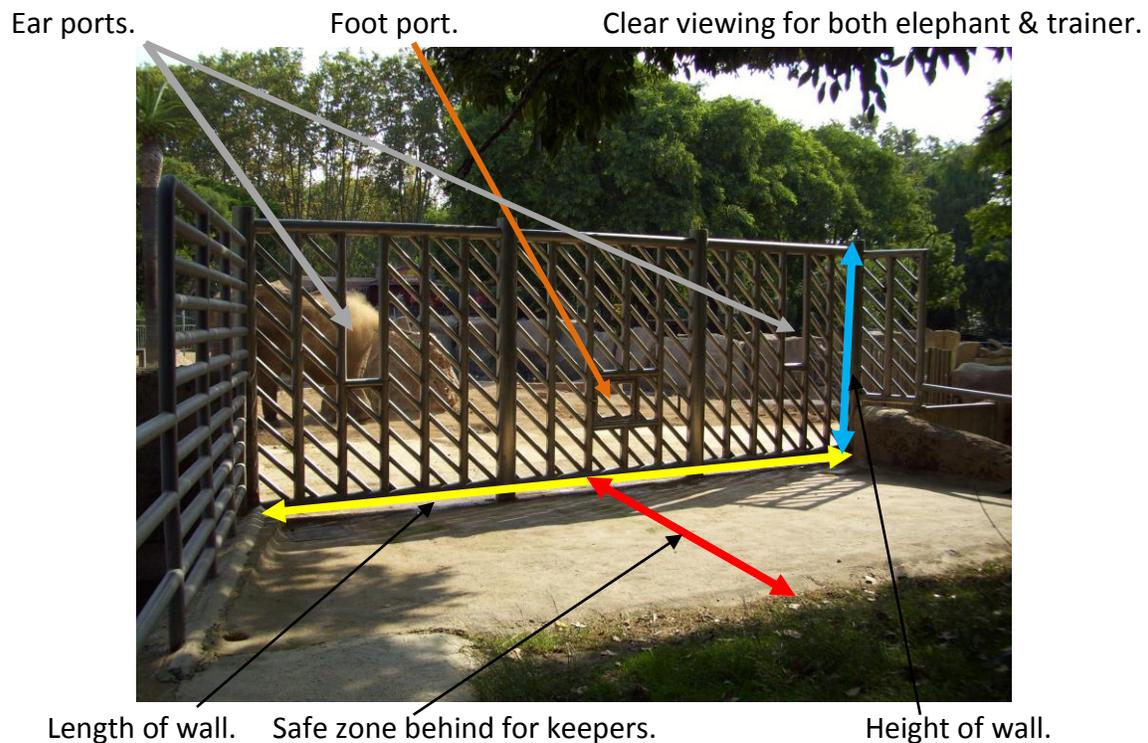
Definition of Protected Contact.

Alan Roocroft September 2008.

There are eight elements that when implemented define the results of Protected Contact with elephants.

1. Correct facility design orientated towards the safety and animal husbandry goals of the elephant program.
2. Safety if approached correctly will in itself define by correct facility design.
3. Clear behavioral goals, husbandry and medical that project elephant welfare.
4. Training techniques accompanied by written protocols that are focused on correct training methods and access for elephants.
5. Positioning and timing. The use of your body positioning and technique timing.
6. Keeper training.
7. Tools used to access the elephants, targets and rewards, etc.
8. Documentation. Clearly written as an institutional and industry guide.

Facility design orientated towards the goals of the elephant program.



The above PC wall is at the Barcelona Zoo and has been in operation for 1 ½ years the keepers learned at the same time as the wall was built and are demonstrating a high degree of skill and success working with the elephants.

Correct facility design, as defined by our elephant welfare standards and safety of the staff, while performing these standards is very important for timely implementation of the husbandry, welfare and medical behaviors. Injury and sickness of course should be addressed in a timely manner, so it goes without saying that safe reliable access becomes crucial and primary and no showboating behaviors take precedent over medical husbandry access.

Many modern zoological facilities implement an in-house version of protected contact based on three things, the elephant keepers understanding of PC, the facility design and constructional limitations already available in their zoo and what keepers and management have seen at other zoos. To cloud the issue further, elephant handling systems have been mixed on no one common philosophical line and even large well established institutions and corporations implement a mixture of systems where animals can reach and displace staff at will, calling it protected contact, some are still going in with the elephants in a free contact style, blurring the philosophical lines for the rest of the zoo world. Most modern zoo managers don't know what a safe elephant handling system should look like and leave the establishment of sensitive institutional safety policy to the elephant team. Two zoos to my knowledge have guided their design process right from the start on PC training and thus incorporated concepts that allow for safe access and stationing. Dublin Zoo in Ireland and Chester Zoo in England have design elements, long walls, multiple access ports and large sand substrate areas where elephants can mix, establish and reinforce herd hierarchical importance. No other true definition of safe PC, to my knowledge, has ever been established where an institution seeking information could follow and



successfully implement best practices for PC, where facility and program requirements and measurements that by design creates reliable and safe access and by definition and implementation enhance animal and human relationships. Go see these zoos when you can. Take stationing as a side note just for this with multiple elephants one needs space and specially designed walls for safe stationing access to implement fluid and reliable release and lockup routines. No new

elephant facility to my knowledge has ever been built with a clear PC definition as its fundamental guide. Of course elephant programs from the onset when PC training was established in the 80's have been left without a clear understanding and explanation as laid out here in this article and to my knowledge it is mostly left in the eyes of the zoo and its staff whether they have knowledge or experience or not, and still in many programs I have seen that are regularly practicing PC, the daily access to the elephants is extremely dangerous even to the point where the elephant could grab and or displace the trainer as it feels fit, one well known facility even lets its elephants stick their heads out into the staff areas.



The two types of elephants demand two different PC wall designs. Trunk versatility of Africans allows for the elephant to pass through relatively tight areas so wall design needs to be closely followed. Asian elephants are less flexible with their trunks so behavioral accessing space can be wider.

The wall design has to have clear visibility for both elephant and humans. One of the important aspects to the success of the training is that the elephant can see you at all times and see what you are doing. I like to recommend when building a wall from scratch that the metal being used be thin enough but strong, 10 cm square with 1 cm wall for the up rights is sufficient for most elephants, bulls might need to be up graded and one way of up grading is too fill the up rights with concrete and connections to standing facilities such as walls and other bars. The design details start from the middle of the wall where the foot port is located out to the sides where the ears port would be installed. Here again PC wall design has two different application for African and Asian elephants. Asian elephants historically



and as they get older are prone to foot abscesses and possibly need regular foot soaks, so we have designed access for both feet and mouth access into the front area. Foot ports, foot soak ports and mouth access opening are 70 cm wide all the way up. The foot port door height can be calculated at 1 meter. A foot soak tub can be passed through this opening and retrieved after soaking. The foot port should be 70 cm high up to the mouth inspection port. All ports need to either locked open or close depending on the application in progress. The mouth inspection port can be the same size of the foot port or as in the facility below the ear port is being used.

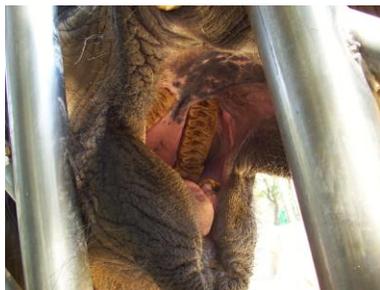
ear port is being used.



Rear feet access.

Front feet access.

Ear access, for blood samples.



Mouth inspections.

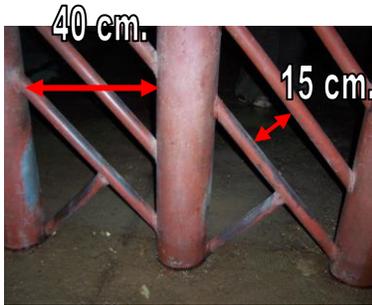


Eye access for medication.

The diagonals that are set at a 45 degree angle to the up rights and start at the bottom of the wall so if any space is left over it will be at the top not the bottom of the wall where the elephant can reach through at the keepers.

Photos from Barcelona Zoo.

Displacement of the keeper from the PC wall is a common occurrence in many institutions, operating in open spaces with only a couple of cross bars or up rights for protection is playing danger. With any PC wall no matter how it is built it can be dangerous, but what runs in unison with any wall design are protocols, things that one can and cannot do while at the wall. So, a keeper can be chased away from

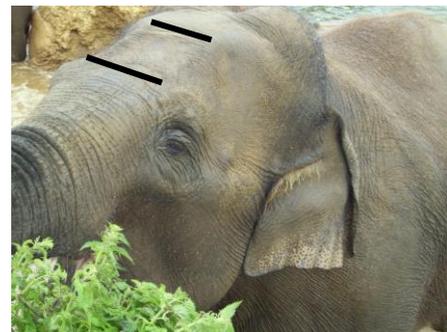


the poor designed wall if it is too open and the elephant can threaten of even hit or grab the keeper. To create the best protection and the best visibility, I have found, that the wall should have fewer big bars and even smaller bars, but without compromising strength.

An ideal wall design after designing in the access ports with up rights every 40 cm and diagonal bars at 15 cm on center apart. Always start the diagonals from the ground up so the space at the bottom is not too open to eliminate grab access, a short kicker off the first diagonal will assure no trunk access. The diagonal bars can also be long flat bar

lengths on the elephant side of the wall which run the full length of the wall and only break where you have installed the access port. An elephant that can displace its caregiver at its own whim will chase the keeper as a game and even make it as part of the routine, taking away from the true reason for training, welfare access. The length of the wall is a vital aspect to the design and to the outcome and success of the program. Nine meters is an ideal length for the wall. PC training is not just training an elephant to lift its feet or present its ear, it should be a process that you use to communicate and form a bond with the elephant and a way, a means under-which you can develop a relationship with an animal. Nine meters allows you to move the elephant and create different circumstances that will build trust and behavioral understanding as you progress, it also allows you to position the elephant to suit the behavior you are looking to obtain. The very first thing that you teach an elephant is to follow you for food then after the animal is following reliably you introduce and touch the target with its head and for that it will receive a food reward. It is not just with any part of the head the area above the top of the trunk above the eyes where the trunk connects with skull. *See photo above.*

One of the main reasons for insisting on this area of the head and no other is that the trunk is flexible and can stretch and reach unlike other areas of its body and the elephant will learn to touch the target without moving its feet. The elephant very soon finds it does not have to move to touch the target if you do not teach this from the beginning. By teaching the elephant and accepting only this area of the head you will be able to manipulate the elephant better with small steps and even be able to teach the elephant to lower its head in relatively short period.



Tools.

There are five visual elephant access tools used when training an elephant in PC. One the target, these training support tools have been widely used in many animal training situations. Two, food rewards are a selection of desirable food items that the elephant wants. There are some places in the US now trying to with-hold food as a motivator for training. It is my opinion that the elephant will work under training circumstances even if it is receiving its normal ration of food during the day and night and with-holding food can create tensions not desirable in, let's say, a breeding group, where tension are high enough without provoking it artificially. Three a food pouch for holding the rewards. Four is body language or



you're positioning around the wall. Five is the wall design. The wall design is the crucial part of this equation. The wall must be designed so you have safe access to the elephant and built so the elephant cannot chase you away from the wall or even displace you as you work. Once the elephant has figured out it can displace you, it will, and aggression might even increase. Many elephants in this types of situation become more aggressive or at least equally as aggressive because they can practice their game anytime they want if the wall is not built correctly. An aggressive elephant can be calmed down quite significantly and its aggressive tendencies reduced with a certain wall design. The wall must have four main components, a good length, a foot port, an ear port and good visually access for both animal and human.

In modern elephant habitats we are now installing PC walls inside and out so we can train the elephants at any time of the day and that the elephants do not have to be taken off exhibit or away from the group, we are trying to de-emphasize the houses as a place where the elephant must go for all procedures and pay more attention to the hierarchy and group dynamics when implementing care routines. If the wall is in an in-climate climate there should be a roof over the wall to protect keeper and animal from the rain.



Blair Drummond Safari Park PC wall.

Behavioral Goals, Husbandry and Medical.

This section will deal with what it is we can do at a wall and encourage you to divide your access program into three parts. The three parts are, what you can achieve at the PC wall through training, what you have to do in an ERC (Elephant Restraint Chute) knowing the elephant should stand completely still while you perform an aversive procedure and lastly standing sedation and a total immobilization procedure where the elephant is laid out for surgery. More information can be referenced in my article (PC, Chutes and Drugs, August 2008).

Safety.

I have seen so many definitions of safe PC with elephants. But I have also seen so many institutions where the elephants rule, developing at its own will, like a person in prison, the tone for the day. "Will I scare the keeper or will I not today"; the safety of the staff is solely in the hands, well, the trunk of the elephant. People are taken off elephants because it becomes too dangerous for that person to work close with that elephant because of facility design has not established,

Terra Natura Zoo, Spain.



philosophically and mostly bounces around without clear SAFE goals. Now we have scenarios where only certain people can work with certain elephants till the lower trainees have been at an



Dublin Zoo, Ireland.

institution long enough that the elephant doesn't chase or displace them anymore. This type of elite-ness a result of poor facility design is a severe hindrance to a successful elephant

program and should be re-considered.

There are strong rules when the wall is built under my specifications and supervision. For one thing we have incorporated lines that are an indication of the zone you are entering and have entered. The two photos in this section highlight by way of lines on the ground operation zones. The photo to the left has a red line just barely seen in the bottom left half of the photo, there are two keepers present when in reach of an elephant, another procedural rule. In the other photo to the right, Dublin Zoo has chosen to use yellow lines because the lines are instantaneously recognized. The zone closest the elephant is the operation zone and if dialogue is needed the keepers are trained to step back into the discussion zone behind the lines where the elephant cannot reach. Reaching into the wall with any part of your body is prohibited, passing a target too far into the wall is also not recommended as elephants will grab or break a target if it should become an easy target, so to speak. Bad habits are hard to drop once established where the abnormal is normalized, so, all program training and evaluation should be orientated towards best practices, safety and animal welfare. The way I see this subject is, young people if trained correctly and the advice they are given help's them establish themselves as an asset to the industry, with a possible future of giving advice to other young people as their career matures, then the circle is complete.

Program Documentation.

Any professional elephant program should supply program support material. This material will clearly state the programs responsibilities and equally the importances and restrictions. The "Elephant Keeper Manual" should be the foundation of your elephant program, it should contain all relevant and pertinent institutional information that a new hire would need to know about his or her new career at your zoo on the elephant section. Please refer to my article called [PC, Chutes and Drugs](#) for a clear outline of which facility and training procedures can be used at which time, making your program safer and more efficient for staff and friendlier for the animals.

One Side Benefit.

Transportation Training.

One side benefit not often considered is PC role in crate training and elephant transportation. At the Copenhagen Zoo in March 2008 we successful moved a large mature Asian male using Protected Contact training; we also moved six other elephants during the same three-day period. Plaisak, Copenhagen Zoo's 50 year old breeding bull weighs around 6 ton he has long tusks and a nervous disposition, it would be no easy move under any circumstances. Plaisak's training started three years before when I was hired to establish PC training so the staff were able to trim his feet and take a blood sample. The team at Copenhagen are top class animal keepers so training them to apply PC training techniques was easy. The date was set to move Plaisak and his stall companions from his old house where he had spent most, if not all of his life to the new Norman Foster elephant building in March 2008. Designing a new transport crate where we could practice PC was our first task. Such a crate had never been built before, to my knowledge, where target access ports and foot gates for restraining were built in the crate so a certain training approach already established in our daily training, could be implemented for the transport.





One of the first step was to train him to accept a bracelet at the PC wall inside and then accustom him to having it firstly removed in the crate and then after some time back at the wall where it was attached.



The photos above show the process in steps crate design in the first photo, target access in the second, foot access in the third and chaining in the four. The fourth photo was taken January 2008 so we had Plaisak ready to travel one month before we had to move him and this scenario we could practice every day so the procedure was clear to him and he was as stress free on the day of the move as we could possibly have him, only the crate leaving the ground could not be simulated.

Other husbandry combinations we have been using for some years now in conjunction with safe PC are twenty-four hour access, under safe circumstances of course. Elephant are in part nocturnal spending much time foraging and moving so this time outside is valuable to the over health of the elephant. Elephants will sleep outside on prepared sand piles and in mixed herds young elephants are tied in the morning after moving and playing all night. It has a positive dramatic effect on their feet also.

PC Training of Rhinos & Giraffe.

This is a short section about two other animals that I am now becoming involved in, in some of the zoos where I work. Husbandry and medical training of Giraffe and Rhinos is trying to become established in our zoos and although we have been in part training Giraffe in chutes and Rhinos also there never seems to be exact information facility measurements, gate sizes and training techniques that people can harvest that gets them started on a way of clear information and philosophies that will expedite the process, in other words everyone is doing it differently. Till now with elephants we have been all over the place throwing good money after bad instead of deciding what it we want in a facility, what access behaviors we need and then building the facility to suit our requirements. Rhinos seem to have a lot of problems with their feet and safe access to all four feet would be good, plus blood sampling and probably rectal access for reproductive analysis these seem to be the priorities. Giraffe are the same although I don't think reproductive analysis is on the list but certainly hoof trimming and blood sampling so specific facility design tailored to the husbandry and medical access needs where behavioral preparation can achieve is essential.



Other interesting reading by the same author.

- Indoor Natural Substrates for Elephants & Medical Issues Associated with Hard Surfaces. October 2004.
- Protected Contact of Elephants in Europe. October 2005.
- Chutes, Drugs & PC. August 2008.
- A Short Foot Work Overview. August 2008.
- A Suggested Elephant Translocation Standard. September 2008.
- Jumbo Job. June 2008.
- Immobilization Procedure in Elephants. 1996.
- The Geriatric care of older elephants. April 2009.
- Asian Elephant Breeding Behavior. April 2009.
- Gravity and hydrotherapy procedures as a way to reduce the possibility of stiffening joints after an accident in elephants. August 2006.

Conclusion.

Trying to create program harmony is my goal, where a person from one institution could go transfer either on a job swoop or for further education to another facility and work with the elephants with no intense training or long orientation. I feel we have achieved this goal with PC training in some zoos already. A person from one culture/country can operate, understand and be understood from the get go and they can work with clear program goals, using simple and safe training techniques under effective facility design. The elephant is the benefactor from this type of situation, and after all, that's why we do what we do.

