

Facility design – a general guide

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As the profession of strength and conditioning develops, and as the need for an effective strength and conditioning programme becomes clear to increasing numbers of people, one of the key factors that will need to be addressed if the full potential of strength and conditioning is to be fulfilled, is that of facilities. One of the great challenges many aspiring strength and conditioning coaches face is the unavailability of facilities suitably equipped to deliver effective strength and conditioning programmes. A look at the majority of private and public facilities quickly reveals their unsuitability for much of the work strength and conditioning coaches need to carry out. Just as problematic, is the fact that in the near future these are unlikely to change, given the differing target market of these facilities, and the lack of information about the safety and efficacy of strength and conditioning based programmes.

Given this, there is likely to be the need for the development of facilities in which effective strength and conditioning programmes can be delivered. This article aims to outline a process which can assist in planning and designing a strength and conditioning facility. It aims to give an overall structure to any facility design, rather than to fully detail all planning decisions. Further articles will look at specific details that need to be addressed when choosing specific equipment such as racks, olympic bars etc.

In setting up an effective strength and conditioning facility the following four stages should be undertaken:

1. Examine the programme philosophy and needs
2. Examine the space available and draw the facility
3. Carry out an equipment inventory and determine new equipment needed
4. Determine the budget, and prioritise needs

1. Examine the programme philosophy and needs

For any strength and conditioning facility to be optimally effective, examining the programme philosophy and its associated needs has to be the first and essential step in designing an effective facility. This provides a clear focus to all planning decisions, and can provide a clear focus for the key decisions that will come later on in the process.

However in many instances the budget will often be the first stage in the planning process, and this can lead to some poor decisions regarding purchases etc.

All facility design must be guided by the coaching philosophy, and by the clear aims and objectives of the programme. These, together with the methods used to deliver the programme, are the key constituents of the programme, and must be planned for when designing the facility. In this way, equipment can be selected that optimises the delivery of the fundamental aspects of the programme, and allows for the effective selection of priorities when the area of budgeting is reached. Without this clear guidance, optimal application of the planned strength and conditioning programme could be severely compromised. When the facility is planned around the philosophy and methods used, optimal use is made of all elements within the planning process.

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In carrying out this analysis, a number of key questions need to be addressed:

What athletes will use the facility?

This is a crucial question as, together with key exercises (dealt with later), it will determine the precise equipment requirements of the facility. For example a programme that targets developing athletes will require some different equipment than that targeting only elite athletes. These facilities, although having many common elements, would differ in the amount of poundage, the need for technique bars, the need for technique plates etc. Additionally, the type of sports the facility will cater for should also guide the planning process. For example a rugby facility may need a number of different features to that required for badminton. While there would be many areas of similarity between sports, it is likely that each sport would have its own specific requirements that would need to be met. The facility should be planned to ensure that the requirements of all sports that use it are met.

How many athletes will use the facility at any one time?

This is an often overlooked issue, and can result in extremely unproductive workouts. Many facilities initially look good and well equipped, but then break down due to scheduling problems where more athletes arrive at a given time than the facility can cater for. We have all been in gyms and waited around interminably for the single squat rack to become available, or been unable to squat effectively due to the lack of appropriate poundage in the facility. Strength and conditioning programmes will often have to be delivered to numerous athletes at any one time, with all athletes requiring the same equipment at the same time. For example a rugby team coming into a facility may all need to start with explosive Olympic exercises, and the facility needs to be able to cater for this. In this way the planning of a strength and conditioning facility will need to differ from many health club designs, in that rather than purchasing a large number of different machines, the strength and conditioning facility will instead need a larger number of single items such as lifting platforms, power racks etc. While effective scheduling can be used to optimise usage of the facility, the awareness of typical athlete numbers will greatly assist in optimising the planning process.

What exercises will be delivered for each target group?

An ideal strength and conditioning facility will allow a coach to deliver their favoured programmes effectively to the type of athletes identified above. In this, the ideal programme design is an ideal starting point, and is guided by the coaching philosophy. A coach should evaluate their training programme design, and then use

this to clearly identify their facility and equipment needs. For many strength and conditioning coaches, the use of the olympic lifts, and basic structural exercises such as the squat are the cornerstone of their programme. In these instances, facilities should be planned to allow for these exercises to be delivered effectively to the target audience. Once this is set out, key questions would focus on, for example, how many lifting platforms/racks, what type of platforms/racks, what types of Olympic bars, the type of bumper weights, additional poundages for squats etc.

This stage also needs to ensure it focuses on all elements of the sessions and not just the weights work. In evaluating this, the coach needs to decide whether activities such as warm-up, plyometrics etc will be delivered in the facility or elsewhere.

Questions such as, 'If the athletes are going to warm-up in the facility how will this be achieved, and where?', need to be asked. In many instances, an open area within the facility can be a great bonus, in that this can be used for activities such as warm-up, plyometrics, agility drills etc. All too often in facility design, all the available space is filled up with platforms, machines, CV machines etc, leaving no space for this type of activity. If these activities are part of the programme, and cannot be effectively delivered elsewhere, then room needs to be available to carry them out within the facility.

By going through this process, the strength and conditioning coach should now have a clear idea of their precise requirements for their facility. This will provide a blueprint around which to base decisions that will need to be made later regarding issues such as budgeting, space availability etc. Without this phase, decisions will often be made without recourse to key coaching and programming factors. For example, knowing the key goals of the programme will allow them to prioritise purchases should there be any budgetary restrictions. Many poor decisions regarding facility design can be traced back to a failure to establish the goal of the programme and facility.

2. Analyse the space available

Many facilities will be limited by space, and thus optimising available space is vital. This is why the stage one of the planning process is crucial in that the coach should now have some clear aims and objectives for the programme, and will have identified the key equipment requirements for an effective programme. In most facilities there will be a compromise between the ideal requirements and key space and budgetary issues. However, armed with the key information from stage one, clear priorities can be set which can optimise the productivity of the facility. In determining space, aspects such as optimal distance between platforms, appropriate traffic flow, minimising movement between similar exercises, suitable

storage areas, supervision requirements etc all need to be accounted for.

Once the key areas are identified, such as a warm-up area, explosive lifting area, dumbbell area, storage areas, supervision areas etc, these should be drawn out to optimise space utilisation. Today a number of packages exist which can facilitate drawing a facility, and these provide a great tool in the planning stages. It is much easier to move equipment on a plan than it is in real life. In drawing the plan and evaluating the space available, all fixed fixtures such as pipes, pillars etc need to be accounted for, as these will often affect where equipment can be placed.

One area that will often not be clear on a scale drawing is that of ceiling height, and this must always be evaluated. This has both aesthetical and practical value. Aesthetically, the taller the ceiling the more impressive the facility will look. On a more practical basis the ceiling has to be tall enough to allow many activities planned to take place. For example, the tallest athletes must be able to lift overhead. A number of facilities are limited by lack of available headroom, where overhead lifting and jumping activities cannot be effectively carried out.

3. Identify equipment requirements

Following on from stage one, the strength and conditioning coach should now have a clear idea of what their facility is trying to achieve, and the equipment requirements for this to be achieved. Stage two will have identified the space available to carry out the strength and conditioning programme, along with identifying space available for equipment. This phase now looks at the specific equipment requirements of the facility and should involve two processes.

Assessing the current equipment inventory

In some instances, a certain amount of equipment will already be in the facility. In these cases, important questions need to be asked regarding whether or not the current equipment is in a safe and usable state, and also whether or not it fits into the facility philosophy. It is likely that some equipment fits effectively with the programme philosophy and remains useful. Other equipment will be in a state of disrepair and will need to be discarded. These two decisions are relatively easy, yet there remains a third type of equipment that is not always well dealt with. It is namely equipment which remains in a good working condition, yet no longer plays an important role in the programmes being delivered. Many weights rooms will have pieces of equipment that remain almost totally unused and are simply a remnant of a previous incarnation of the facility. In these cases this type of equipment is taking up valuable space, yet contributing little to the programme and should be removed.

Once an effective inventory has been carried out, and compared to the needs identified earlier, then the next stage can begin, namely assessing additional needs.

Assessing additional needs

These will relate to the previous elements: the programme needs, the space available and the current equipment inventory. This should clearly identify the additional equipment requirements with which to deliver the programme. Within this there will probably need to be some form of prioritisation, which will be important when the budgeting element is addressed.

Armed with this list, the next step is to source the equipment. This should be done carefully, evaluating a number of sources. This evaluation should ideally involve trying out the products, and also contacting current customers of the suppliers to evaluate their feelings about the equipment. In general three vital questions need to be asked:

1. Does it allow for the delivery of the key exercises for the target athletes?
2. Can it stand the rigour?
3. Is the company reputable?

These questions will allow for the effective evaluation of equipment and suppliers. However, the final decisions must relate to the specific requirements of the facility, and should not be guided by the marketing accompanying many products.

4. Plan the budget

Very rarely will there be an indeterminate budget with which to purchase every possible need. With this in mind, the previous phases will have identified the key priorities, weeding out the 'need to haves' from the 'nice to haves'. Armed with current quotes from reputable companies, priorities can then be set against the available budget. This clear needs analysis can also be an effective bargaining tool for additional funds, as a compelling argument can be put forward for additional budgeting.

Once this is done, and the budget agreed, the next step is to order the equipment. Where possible this should be done directly by the coach, and as early as possible. This allows for the coach to ensure that orders conform to their own specific specifications, and that the order is actually made at the appropriate time. This allows any mistakes or delays to be clearly identified and rectified. Often, ordering through a third party simply adds a layer of delay and confusion.

Conclusion

While not meant to be an exhaustive look at all elements involved in facility design, this article will hopefully provide a basic framework around which to plan and design effective strength and conditioning facilities. At all times the key

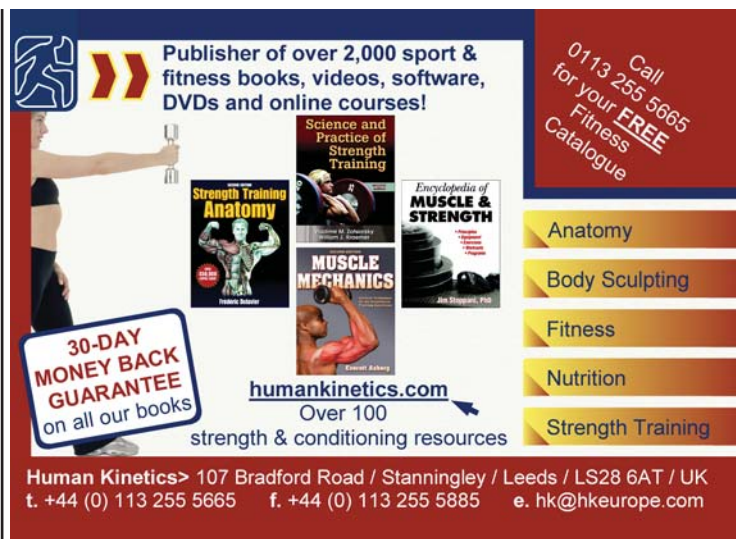
message is that the facility needs to be designed to optimise the strength and conditioning coaching, and all decisions should be made with that in mind. Functionality should be the key, allowing the effective delivery of effective athlete centred programmes.

Acknowledgements

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Further reading

Epley, B. (2004) *The Path to Athletic Power*, Champaign Ill: Human Kinetics.



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