

# FACILITY PLANNING GUIDE

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## Getting Started

Since AMF revolutionized the modern sport of bowling with the first installations of the automatic pinspotter in the early 1950's, investors in over 90 countries have depended on AMF, and now QubicaAMF, for the highest quality bowling equipment. AMF was the first company in the industry to market pinspotters, automatic scoring, Surlyn coated bowling pins, urethane reactive bowling balls and bumpers. In 2005, it made perfect sense to create the industry's premier product line by merging with Qubica, the industry leader in scoring, entertainment and bowling management software. QubicaAMF continues this long history of innovation by staffing the largest R&D team in the industry with the goal of raising the revenue-generating ability of our customers.

Opening a center takes 12 to 24 months. This includes all stages, from the business plan to the grand opening. Eight months between the start of construction and the grand opening is typical. The bowling equipment installation takes only 1-1 1/2 days per lane.

Start your center with the most experienced partner in the business. A partner who will stand by you all the way.





## Site Selection

### Property Size

Traditional centers use 90m<sup>2</sup> (100 ft<sup>2</sup>) per lane, plus parking. Multi-attraction entertainment facilities require additional space. Local zoning requirements may require additional space as well.

### Location

Co-locating with complementary entertainment options close to residential areas is recommended. Nearby office parks and strong employers give added strength to a location.

### Parking

Plan for 5-6 marked spaces per lane. Allow for entrance, exit and driving lanes. Allow 20m<sup>2</sup> (215 ft<sup>2</sup>) per space. Parking requirements are often set by local ordinance.

### Zoning

Check all ordinances and regulations for your location keeping in mind any future expansion plans.

### Visibility

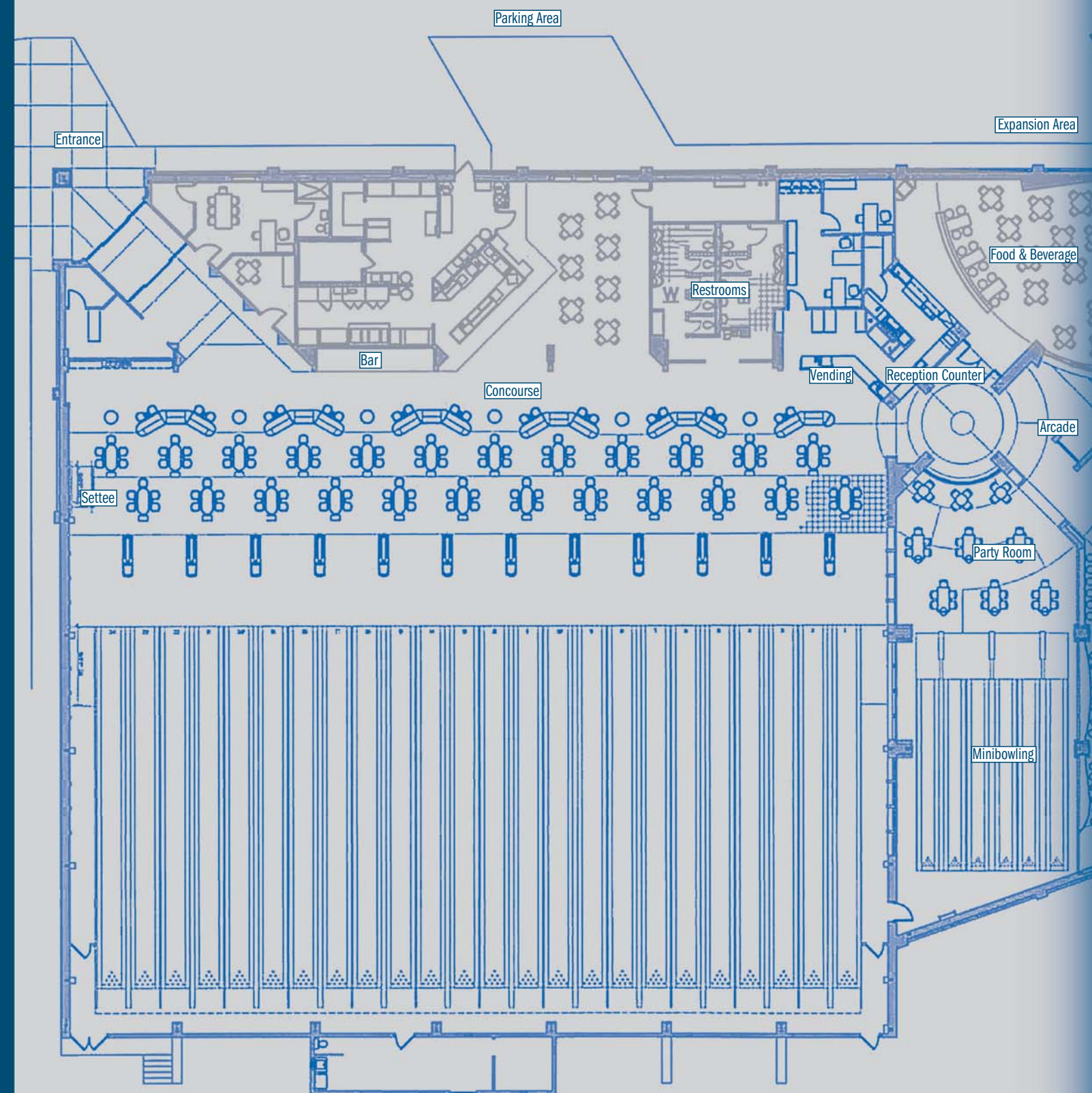
Drive-by impressions are important to top-of-mind awareness of bowling as an entertainment option. Identify high traffic locations with clear line-of-sight. The growth of casual bowling increases the importance of visibility.

### Signage

Strong signage reinforces your center image and can help compensate for large set-backs from main traffic flows. Well-lighted signage is recommended. Signage is the first and last impression of your center.

### Exterior Lighting

Create a safe and inviting appearance with ample outside lighting. Colored lighting is a strong component of many architectural designs.



## Architect Selection

Good design means more than a pretty center. Design can encourage more efficient service and greater revenues in lounge and food service areas. An expert architect can guide you to good design. QubicaAMF may be able to recommend an architect who is experienced with bowling-anchored entertainment. We can also work closely with your preferred architect to insure that the bowling equipment is well planned.

## Feasibility Analysis

QubicaAMF will support you in the development of your business plan. We can support your project with demographic analyses based on drive time or distance for various locations. In addition, we can provide detailed financial models for building your business case. QubicaAMF has contact with several service providers, in various markets, who may be able to offer in-depth feasibility analyses specific to bowling and entertainment facilities.

## Architect & Builder Support

QubicaAMF has the in-house resources to assist with the placement of your detailed bowling equipment installation. We work directly with your architect or builder to review and check the accuracy of your center design. Be sure to check the references of your architect and builder and ensure they are licensed in your state or country. We recommend choosing an architect or builder who has completed projects of a similar scale.



# Building Construction

## Exterior Surfaces

Consider the image impact and maintenance requirements of the building façade. Place water connections on the exterior to allow for cleaning the entrance area.

## New Structures

To allow for future expansion, orient spans (roof support structures) from the front to the back of the lanes. Spans side to side across lanes are the most economical for centers with 16 or fewer lanes, but limit expansion.

## Building Size

The table to the right has the width of lanes with no separations such as columns. A minimum width of 1m (3') is recommended for access to the pinspotters and mechanic's area. A typical bowling center will be 45m (150') in depth. Additional space must be allowed for column separations and side aisles.

## Existing Structures

Many centers are constructed in existing buildings which have supports. Common "big box" layouts are supported by columns spaced to accommodate sets of six lanes. Columns should be positioned well beyond the foul lines. Be sure to compare the cost of utilizing an existing structure with the cost of new construction.

## Building Layout

The strongest designs give a full view of the activities in the center from the entrance. Entertainment centers with multiple anchors may require creative signage to highlight all attractions.

## Floor

Use reinforced, poured concrete over a good moisture barrier. Before pouring, conduit (wire ways) must be securely placed and checked for accuracy. Seal concrete not covered with tile or floor covering. Bowling equipment installation requires moisture-free conditions. Consult your contractor to ensure the concrete is dry prior to lane installation. In many cases, a 150mm (6") thick floor is poured under the rear aisle and machine area with a 100mm - 150mm (4" - 6") floor throughout the rest of the area under the bowling lanes. The slab from the back wall to the edge of the settee and from the side wall to the opposite wall should be level to +/-13mm (1/2"). Excessive deviations may result in additional charges due to shimming

# Bowling Lane Width

| Lanes | Width (feet - inches) | Width (meters) |
|-------|-----------------------|----------------|
| 2     | 11' 4-1/8"            | 3.458          |
| 4     | 22' 5-1/2"            | 6.845          |
| 6     | 33' 6-7/8"            | 10.233         |
| 8     | 44' 8-1/4"            | 13.621         |
| 10    | 55' 9-5/8"            | 17.009         |
| 12    | 66' 11"               | 20.396         |
| 14    | 78' 3/8"              | 23.784         |
| 16    | 89' 1-3/4"            | 27.172         |
| 18    | 100' 3-1/8"           | 30.559         |
| 20    | 111' 4-1/2"           | 33.947         |
| 22    | 122' 5-7/8"           | 37.335         |
| 24    | 133' 7-1/4"           | 40.723         |
| 26    | 144' 8-5/8"           | 44.110         |
| 28    | 155' 10"              | 47.498         |
| 30    | 166' 11-3/8"          | 50.886         |
| 32    | 178' 3/4"             | 54.274         |
| 34    | 189' 2-1/8"           | 57.661         |
| 36    | 200' 3-1/2"           | 61.049         |
| 38    | 211' 4-7/8"           | 64.437         |
| 40    | 222' 6-1/4"           | 67.824         |
| 42    | 233' 7-5/8"           | 71.212         |
| 44    | 244' 9"               | 74.600         |
| 46    | 255' 10-3/8"          | 77.988         |
| 48    | 266' 11-3/4"          | 81.375         |
| 50    | 278' 1-1/8"           | 84.763         |
| 52    | 289' 2-1/2"           | 88.151         |
| 54    | 300' 3-7/8"           | 91.538         |
| 56    | 311' 5-1/4"           | 94.926         |
| 58    | 322' 6-5/8"           | 98.314         |
| 60    | 333' 8"               | 101.702        |



of the foundation. In the U.S., the Americans with Disabilities Act requires access from the settee area to the approach. Check regulations in other countries for similar requirements.

A level transition from the settee to the approach is formed by pouring the approach foundation 400mm (16") lower than the settee foundation. A step up from the settee to the approach is formed by decreasing the 400mm (16") step between the approach and settee foundations.

Lane weight is approximately 5,900 kg (13,000 lbs) per pair spread over 86m<sup>2</sup> (920 ft<sup>2</sup>).

Pinspotter weight is approximately 2,140 kg (4,700 lbs) per pair spread over 10m<sup>2</sup> (108 ft<sup>2</sup>).

## Lane Length

The distance from the back of the pinspotter to the edge of the approach is 25,35 m (83' 2 1/16"). A service aisle of 1.5 m (5') is recommended behind the pinspotter. The minimum depth of the settee area is generally 3.7 m (12'). The total length from back of service aisle to concourse is 30,55 m (100' 2 1/16").

## Foundation Fire Blocking

QubicaAMF recommends, and local fire ordinances increasingly require, the use of fire blocking or fire proofing of the sub-floor. Multiple methods of fire proofing exist with varying degrees of cost. Be sure to discuss this with your architect or builder.

## Ceiling Height

Ceiling height typically ranges from 3.0m to 3.7m (10' to 12') above the approach and lane surface.

## Ceiling Material

Check local ordinances and fire insurance requirements on flame resistance of materials. Consider the ceiling material's:

- visual impact on the interior design
- resistance to deterioration from water, smoke, rust or mildew
- maintenance characteristics
- availability for future expansion

Specify the material's sound absorption requirements. 70 to 80db acoustical material should be used over the bowling lanes and concourse area. 85 to 90 db should be used on the back wall, the back face of the curtain wall, and the area with the pinspotters and service aisle. Provisions must be made for supporting QubicaAMF overhead scoring monitors. An Overhead Support Certificate must be signed by the engineer or architect.



### Ceiling Lighting

The architect will make specific lighting recommendations depending on the theme and mood of the center. The area over the lanes is traditionally brighter than the approach and settee since it is a focus of the design. Typically four to five rows of lights are spaced between the foul line and the pins. Tamper-proof switches or circuit breaker switches are recommended for lighting.

### HVAC

Bowling equipment generates approximately 4,000 BTUs per lane per hour. Each watt hour of light adds 3.4 BTU of heat. Maintain temperatures from 20C to 23C (69F to 73F) for ideal bowling conditions. Average relative humidity should be approximately 35% to 45%. Humidity control is important due to its effect on pin life, scores, lane conditioning, lane life, center cleanliness and approach conditions. Low humidity increases static electrical charges and may affect electronic equipment. Air filtering can remove the majority of dust and smoke resulting in lower maintenance costs.

### Sprinkler Systems

Check local building codes and insurance requirements before finalizing the fire protection plan.

### General Electrical Requirements

Installation of the appropriate conduit for power (and control cables where required by local code) is the owner's responsibility. Conduit may be required from:

Conduit may be required from:

- pinspotter pair to foul detector pair, ball return and scoring unit
- low voltage wall distribution box to pinspotter pairs and control counter
- curtain wall to pinspotter pair, monitor pair, scoring camera, scoring unit and scoring interface box
- scoring unit to adjacent scoring unit and control counter
- scoring control to back office system
- bumpers and pit lights to control counter.

A professional electrical engineer should assist the architect.



## Interior Design

### Reception / Control Desk

Customer service is a focal point of the center and the reception desk should be located so that the customer sees it clearly from the entrance. The service personnel need to be able to see the lanes while welcoming and serving customers. Some elevation may help visibility. The counter should be designed for at least three people to work comfortably together. Typically the point-of-sale system, lane control, shoe rental, PA (public address) system and sound system are located at the customer service counter.

### Concourse

Concourses offer access between reception and the center attractions and may accommodate parties, eating, conversation, sitting or merchandising. A clear concourse aisle of at least 3.7 m (12') is recommended at peak loading. Be sure to consider common use areas such as water fountains, coin-operated games, trash receptacles, ball racks, advertising displays, lockers and ball polishing machines.

### Settee

As both a sport and social activity, bowling needs special attention to create an effective transition from the group activity to the individual activity. Alternative seating arrangements can have a significant influence on interaction, improving or detracting from conversation, viewing, pace of the activity, or food & beverage consumption. 3.7 m (12') is generally the minimum depth of the settee area. Vinyl tile flooring is easier to maintain in the settee area and avoids the static build up that carpet causes. Storage of customer belongings such as coats, shoes, and personal bowling equipment must be accommodated.

### Food & Beverage

Depending on the entertainment concept of the center, the food & beverage area may serve both a sit-down dining area and a carryout counter for concourse dining. Cooking odor exhaust requires careful planning and cooking areas should have automatic fire extinguishing systems.

### Vending

Vending should be housed in alcoves to prevent intruding on the concourse. Trash receptacles should be near the vending machines.



### Profit Opportunities

Consider complementary profit centers around bowling to maximize the return on investment. Multi-purpose rooms provide space for parties, meetings, banquets, luncheons and special events. QubicaAMF has the relationships to complement bowling with a broad range of activities.

- Mini-Bowling
- Redemption and Arcade
- Billiards
- Laser Tag Arenas
- Children's Learning Centers
- Go-Karts (typically 930 m<sup>2</sup> (10,000 ft<sup>2</sup>) minimum)
- Mini-Golf
- Rock Climbing
- Pro Shops
- Interactive Ballplay (Ballocity)

### Additional areas

Restroom design should provide for heavy traffic and easy maintenance. Ceramic tile walls, tile floors, wall mounted toilets and hand dryers are recommended. Plan for excellent ventilation with direct exhaust outside.

Management offices need visibility of the customer service counter.

Mechanics need a quiet work area, preferably a closed room, protected from the noise of the pinspotters. A minimum depth of 4.26 m (13') is recommended. Pins and repair items can be stored in this area.

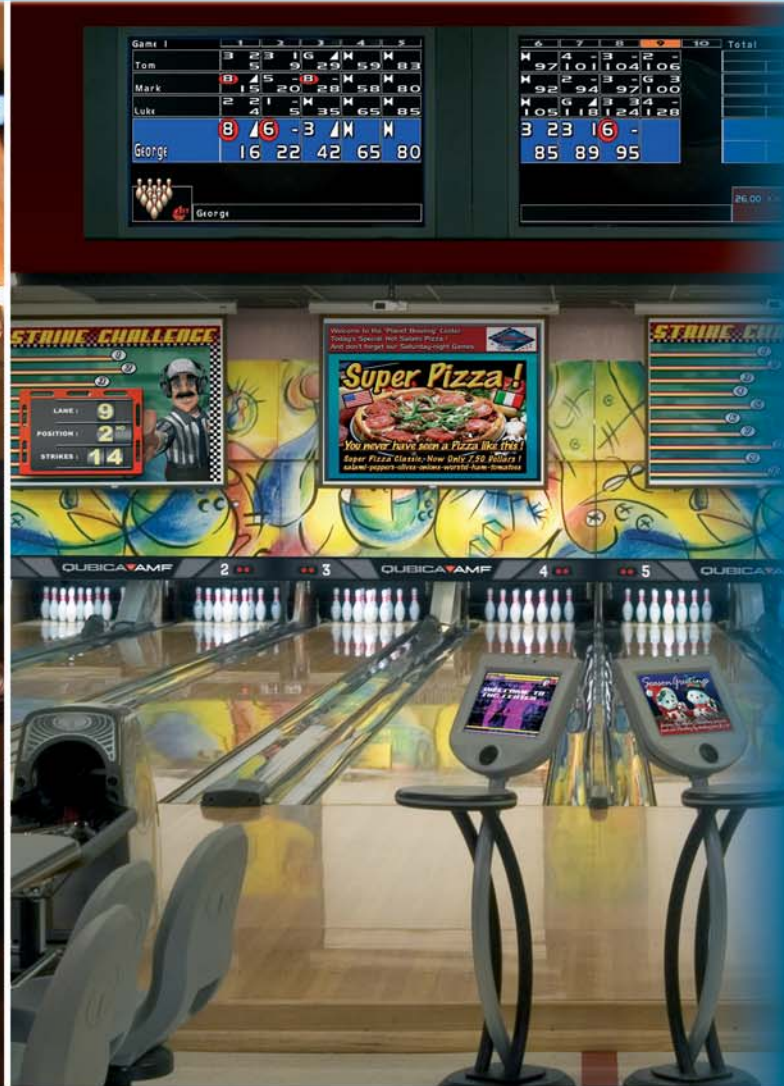
A separate janitorial room including a deep sink and general cleaning supplies is recommended with a minimum space of 1.4 m x 2.0 m (4'6" x 6'8").

A separate storage area for food and beverage is recommended near the kitchen.

Public phones and automatic teller machines should be in view of the service desk. Consider handicapped customers in their placement.

### Security Considerations

As a minimum consider i) cash security for the bowling center such as a secure safe, ii) visibility from the control desk of all cash handling areas, and iii) security cameras inside and outside the center may reduce slip and fall claims, theft, and workmen's compensation claims.



### Existing Structure Review

If you are considering an existing structure the following list offers a useful checklist of features to review on site.

- Location
- Parking
- Zoning
- Visibility
- Signage
- Exterior Lighting
- Exterior Surface
- Building Size
- Column Locations
- Slab Height Deviations
- Disabled Access
- Ceiling Height
- Ceiling Composition
- Ceiling Structural Support
- Existing lighting
- HVAC Capacity
- Sprinkler Systems
- Fire Code Requirements
- Electrical requirements
- Structural obstruction to locating:
  - Reception Desk
  - Concourse
  - Settee
  - Food & Beverage Area
  - Vending
  - Restrooms
  - Additional Profit Centers
- Sound System
- Mechanics Shop
- Security Requirements
- Pinspotter Delivery Access