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Ministry of
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مشروع بناء القدرات لتمكين الإدارة المضمية مشاريع التصاميم المضمية للمناطق التقليدية في البحرين المرحلة الأولى: الاستراتيجيات والسياسات الدليل الإرشادي

**CAPACITY - BUILDING FOR ENHANCEMENT
OF URBAN GOVERNANCE**

**Urban Design Projects for
Traditional Areas in Bahrain**

**Stage One: Strategies & Policies
Manuals**

February 2006





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مشروع

بناء القدرات لتحسين الإدارة الحضرية

مشاريع التصاميم الحضرية للمناطق التقليدية في البحرين
المرحلة الأولى: الاستراتيجيات والسياسات

Capacity-Building for Enhancement Of Urban Governance Urban Design Projects for Traditional Areas in Bahrain Stage One: Strategies & Policies

الدليل الإرشادي Manuals

1- Conservation Planning Issues: Strategies

مسائل الحفاظ التخطيطية: الاستراتيجيات

2- Manual of Economic Strategies

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3-Manual of Urban Design, Architectural

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4- Manual of Restoration Codes

دليل ترميز الترميم

February 2006





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مشروع
بناء القدرات لتحسين الإدارة الحضرية
(الحفاظ على المناطق والمباني التراثية)
المرحلة الأولى: الاستراتيجيات والسياسات
دليل 1: تخطيط الحفاظ والاستراتيجيات

**Capacity-Building for Enhancement
Of Urban Governance**
Urban Design Projects
for Traditional Areas in Bahrain
Stage One: Strategies & Policies

Manual 1
Conservation Planning Issues: Strategies

February 2006

Conservation Planning Issues: The Town

Strategy 1: The Establishment of Overall Protection and Buffer Perimeters for Manama and Muharraq

Background:

In both cities of Manama and Muharraq a widespread process of deterioration and Decay of the historic urban fabric is undergoing, which is not only leading to the loss of many buildings of architectural significance, but also, to the worsening of the housing conditions, the decline of the traditional activities, the overall deterioration of the urban environment. As a result, the historic fabric is becoming more and more ordinary and is definitely losing its capacity to stir up the community's sense of belonging.

The establishment of protection and buffer perimeters is intended to be the first step towards the implementation of a conservation policy, whose aims would be the safeguard and the regeneration of the architectural and urban heritage as a cultural asset and a vital component of both the present day and future city. These perimeters should encompass all the urban areas, which should be the object of such a policy, to be eventually carried out with different tools: i.e., a conservation plan with appropriate land use zoning and building regulations, special projects for sensitive areas, pilot projects dealing with specific issues, and so forth. Hence, the first objective is to prevent all interventions, which would continue the actual process of deterioration and decay and imply a further loss of the historic cultural heritage in the two cities, whilst creating the premises for a proactive policy of conservation.

To this purpose, according to the international best practices in conservation, it is proposed to establish two types of perimeters, to be traced out on the bases of an accurate analysis of the historic evolution of the urban fabric and of their present configuration:

- Protection perimeters, which would include the whole historic settlement pattern, which is still existing with a high level of integrity and authenticity. For the two cities of Manama and Muharraq these encompass the urban pattern and fabric whose morphological and typological features reflect the structure as it was before the beginning of the modernisation process, which took place during the '30s and the '40s;
- Buffer perimeters that include those parts of the historic urban settlement pattern, whose morphological structure and typological features have been more or less transformed by the process of modernisation but still remain visible, as well as the surrounding areas which developed in more recent times.

The establishment of these perimeters has to be associated to the establishment of some basic and simple safeguard regulations. Both have to be considered as temporary measures, which only make sense if a consistent and widespread policy of conservation is undertaken with the eventual set-up of other legislative and planning tools, in order to address the different and various issues that affect the future meaning and role of the two historic cities.

الإستراتيجية 1: إقامة أحزمة للحماية الشاملة و العزل في كل من المنامة
و المحرق

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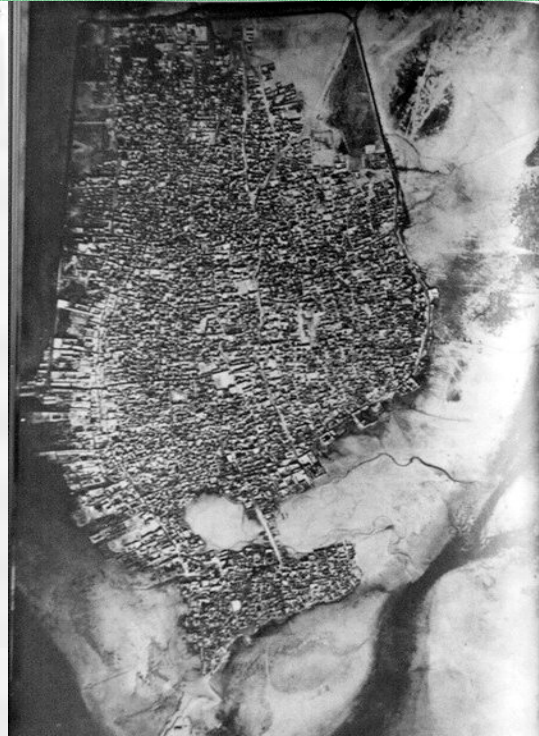
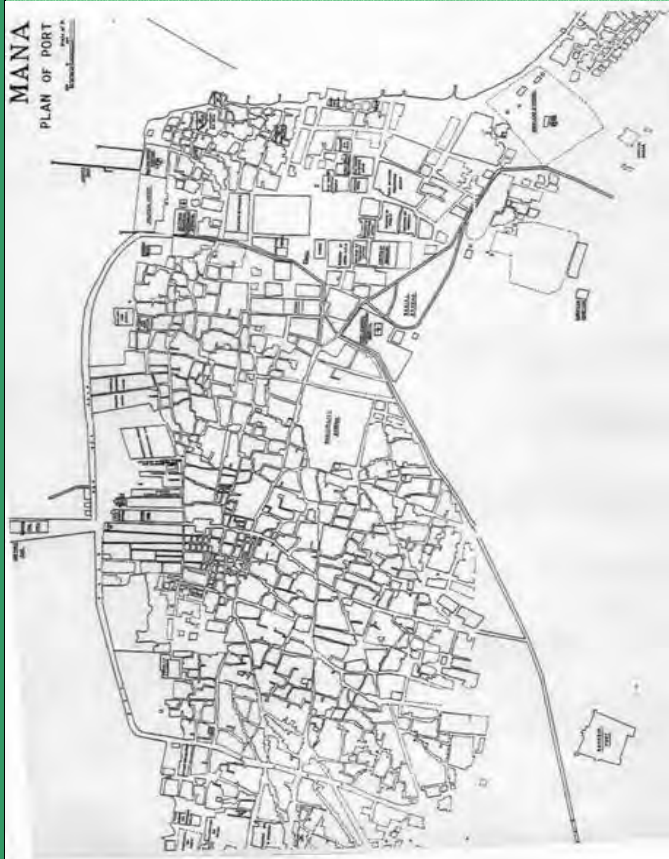
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Implementation:

A draft proposal of these two types of perimeters is shown in the plans below, traced out on the bases of the initial analyses carried out on the historic evolution and the present situation in the two cities. However, their establishment and legal approval would imply the following:

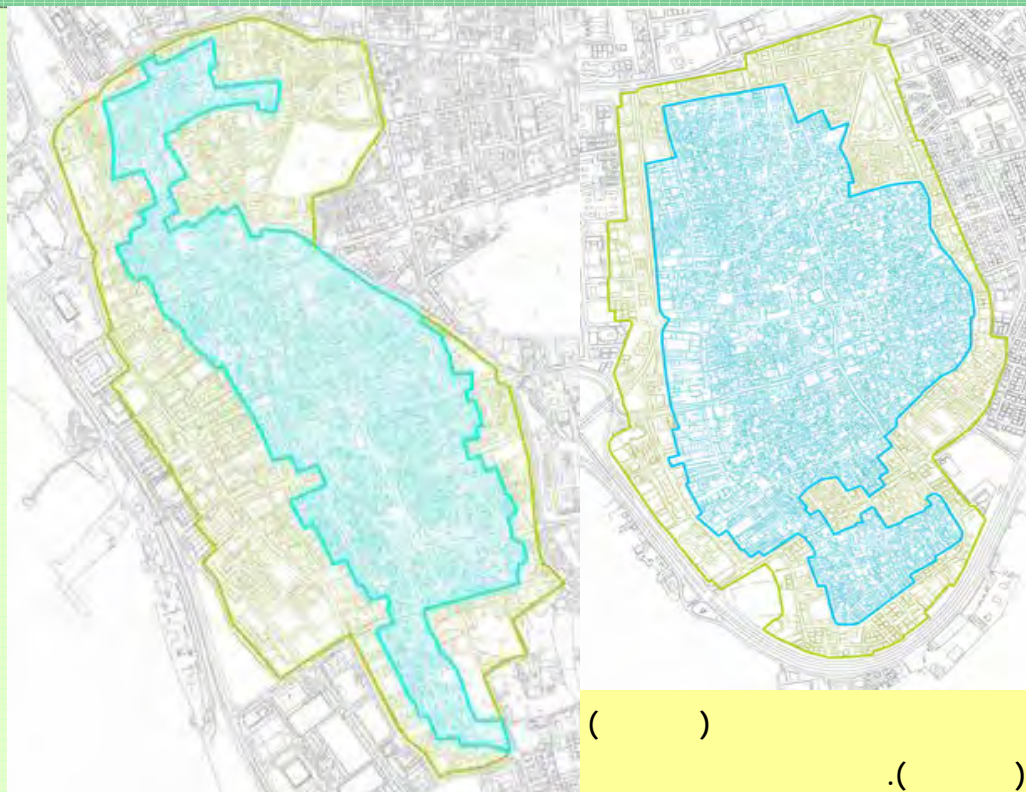
- 1) A final definition of these perimeters, which should be carried out through:
 - An extensive and accurate analysis of the historic cartographic and iconographic documentation, in order to identify the patterns, which remains after the transformations since the 30's. To this purpose an in-depth investigation is necessary in order to identify all the existing sources in Bahrain and abroad.
 - An accurate analysis of the aerial and satellite images available since the '30s, associated to specifically oriented site visits, in order to carry out an overall appraisal of the different degrees of transformations of the urban fabric spatial features within the protection perimeters. Moreover it is essential to identify, in the buffer zones, the isolated buildings of architectural and historic significance (dating up to the '40s), and all the landscape features (i.e., cemeteries and other open areas) that deserve a specific protection.



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A map of Manama of the early '30s (above) and the aerial photograph of Muharraq in 1939 (right), clearly show the morphological structure and the extent of the two fabrics at the beginning of the modernisation process

المصدر: دانيال بيني، تقرير مخططات الحفاظ، فبراير 2006



The proposed protection perimeters for Manama (above) and Muharraq (right).

- 1- Protection area (light blue),***
- 2- Buffer area (light green)***

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Reference: BH “patterns” 1, 2, 3; DP, Conservation planning report, Feb 2006

Eventually, an extensive field survey has to be carried out within the protection perimeters enabling a detailed identification and assessment of the typological, spatial and constructive features. This will make possible the identification of the different micro-zones and/or buildings to be submitted to specific conservation and rehabilitation measures, in the framework of the “conservation plan” to be established, and as a basis for the development of “special projects” for the most sensitive areas or “pilot projects” for specific priority issues.

2) The establishment of temporary regulation measures for the areas included in the protection and buffer perimeters, in the wait of the preparation of a definite conservation zoning. As for the **protection areas**, these measures should namely prevent:

- new roads cuts or widening;
- demolition or reconstruction of heritage buildings already identified by previous survey and investigations carried out by the Housing Committee.
- any demolition without reconstruction.

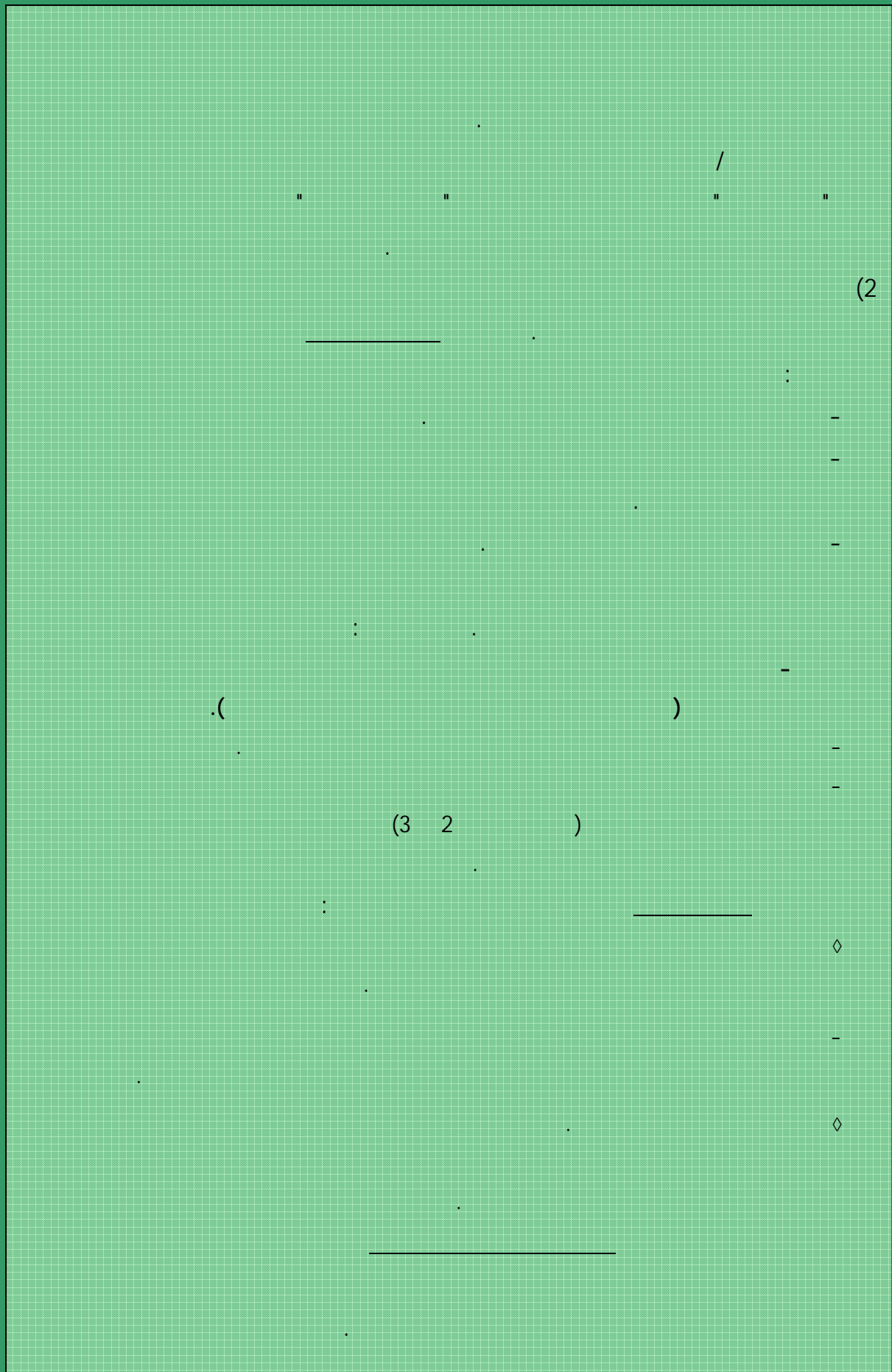
Moreover all interventions of reconstruction and new construction have to respects the basic spatial rules of the historic fabric. In particular:

- The building height should be determined by the average building of the adjacent blocks (excluding The buildings built according to the present Master Plan);
- the new buildings have to abut to the plot perimeter and the adjacent houses;
- Only limited redevelopment interventions should be admitted, fixing the maximum surface or the number of plots (no more than 2 or 3), in order to preserve as much as possible, the historic “texture” and the diversity of the fabric.

As for the **buffer perimeters**, in principle the following measures should be adopted:

- No interventions of any type, whose volume, shape and height could prevent the visual channels and the possible linkages between the historic fabric and the seaside;
- No development of the road and parking system should be allowed that makes more difficult the pedestrian accessibility to the historic fabrics and prevent the further establishment of closer links between these and the seaside;
- No demolition or reconstruction, but only conservation interventions should be allowed for buildings of architectural and historic significance, to be previously identified by means of the site visits carried out for the final definition of the buffer perimeters.

For the urban areas included in both protection and buffer perimeters, it is necessary to “freeze” the actual land use zoning, in order to prevent further demolition and reconstruction intervention that would be inconsistent with the characteristics of the historic urban fabric.



Conservation Planning Issues: The Town

Strategy 2: The Definition of a Detailed Land-Use and Conservation Zoning within the Protection Perimeters

Background:

The spatial characteristics and the state of conservation of the urban areas within the protection and the buffer perimeters are not homogeneous. Due to the different impact the modernisation process after the '30s and '40s, and of the recent urbanisation in the reclaimed lands along the seaside, these can show:

- different degrees of integrity (or transformation) of the morphology and texture in the historic fabrics;
- more or less important transformations in the activities pattern and the spatial organisation of the *ferij*.
- different presence of buildings of architectural and historic significance belonging to various typologies.

The definition of the different types of zones is crucial, in order to establish an appropriate land use regulation within the protection areas, which should be associated with the identification of the categories of intervention for each property. In particular a list of compatible activities should be established for the buildings of architectural significance, in order to promote their revitalisation through a widespread policy of “adaptive reuse.”

Implementation:

The definition of a detailed land use and conservation zoning implies the following:

1) To carry out an inventory of buildings and open spaces included in the protection perimeters, collecting the basic information through a field survey. In particular, an exhaustive inventory of all the properties (buildings and open spaces) of the historic fabric should be carried out, in order to appraise all the elements that could be relevant in order to establish the permitted categories of intervention (i.e. the present uses and ownership, the typological characteristics, the architectural and historic significance, the prevailing construction system, the general conditions of repair, the state of occupancy, the types of transformations). In the “buffer” areas the inventory can be limited to the only buildings and constructions of architectural significance to be previously identified through accurate site visits and analysis.

A survey form for the inventory has been developed and tested in a sample area (about 80 buildings) in Manama.

2) To identify, on these bases, the following types of zones;

- The historic and “traditional” fabric, whose spatial pattern show a high degree of integrity of the “pre-modern” features, particularly the street pattern. In general, land use regulations and categories of interventions should aim to:
 - (a) the conservation and upgrading of the existing street and open spaces pattern,
 - (b) the preservation of all the buildings of architectural significance;
 - © the rehabilitation of all the buildings with no particular architectural significance that are however well integrated in the historic context;

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الإستراتيجية 2: تعريف إقامة مناطق استخدام الأراضي والحماية داخل أحزمة الحماية

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(d) the mitigation of the negative impacts of recent intrusive buildings and inconsistent or degraded open spaces. In these zones, in principle, no further demolitions without reconstruction and redevelopment interventions would be admitted in order to preserve the texture of the fabric;

- The “**transitional**” or “**mixed**” urban fabric, where the historic spatial pattern has been more or less transformed by redevelopment or reconstruction interventions but still remain visible and relevant. In these areas, all the remaining historic features should be preserved and upgraded as in the above zones, in association with well defined interventions of urban regeneration through localised redevelopment and infill projects aiming at the recovery and possibly the reconstruction of an urban spatial framework respecting the historic fabric;
- The “**transformed**” or “**modernised**” fabric, where an overall control of the new building construction, and the reshaping of the open spaces are needed in order to upgrade the urban environment and reduce or eliminate the negative impact of incompatible activities on the historic fabric.

3) To establish a set of regulations and codes for each type of the above zones aiming at the definition of permitted interventions on buildings and open spaces. These should be based on the following general categories of intervention:

- Preservation of the buildings of architectural significance, which should be considered as the main asset for the revitalisation of the historic fabric (conservation, restoration, cleaning, rehabilitation).
- Rehabilitation and upgrading of the buildings of no architectural significance, which are however not consistent with the character of the historic fabric (clearing, rehabilitation, reconstruction)
- Mitigation of the negative impacts of recent intrusive buildings, contrasting with the historic context (demolition, integration and remodelling of the facades).
- Regeneration of empty open spaces, which contribute to the urban environment deterioration (localised redevelopment and infill projects, new landscape arrangements of parking areas and public spaces, urban furniture)

The above categories should be detailed, in order to provide a clear definition of each specific type of intervention to be coded. To this purpose, it would be useful to develop some demonstrative pilot project.

- 4) In association with the above regulations and codes, it is necessary to identify the possible compatible uses for the different types of buildings and to set up specific incentives in order to promote a widespread policy of “adaptive reuse”, whilst removing the activities, which are inconsistent with the historic fabric and may provoke further damages particularly to the buildings of architectural significance.

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Samples need to know about it



A sample of **“transitional area”** in Manama. The historic pattern is still kept, but some streets have been widened to become commercial thoroughfares. Several transformations have occurred in the built-up fabric as well, especially along the **“modernised” streets**. The red perimeter shows the survey test area



The survey test area in the **“transitional” zone**: a **“modernised” commercial street** and two **“traditional” streets** (above), two empty plots used as informal parking (besides) .



منطقة اختبار المسح في النطاق الانتقالي : شارع تجاري معاصر ، و شارعان تقليديان، قطعنا أرض خاليتان تستخدمان كموقف غير رسمي .

Survey test area

ARCHITECTURAL AND ENVIRONMENTAL INTEREST



Survey test area

CATEGORIES OF INTERVENTIONS



نماذج مهمة يراد معرفتها

Survey test area

BUILDING CONDITIONS



Two of the thematic maps showing the survey test findings (above). If the historic spatial pattern is still preserved, the built up fabric is formed by buildings with different functional and architectural characteristics, which call for different types of interventions.

On the bases of the survey data including (ownership, state of occupancy, building typology, construction system, and so forth) the category of the permitted interventions are identified for each buildings (left). Some "sensitive" areas can also be defined to be possibly submitted to integrated conservation and regeneration projects.

خارطتان للفكرة الرئيسية تظهران نتائج اختبار المسح (الأعلى). إذا كان النموذج المكاني التاريخي ما يزال محفوظ، فإن النسيج المبني ينشأ عن طريق أبنية ذات خصائص وظيفية و عمرانية مختلفة، مما يستدعي أنواع مختلفة من التدخلات.

على أساس معلومات المسح متضمنة (الملكية، حالة الإشغال، صنف المبني، نظام البناء، و هلم جرا) فإن فئة التدخلات المسموحة محددة لكل مبنى (اليسار). بعض المناطق "الحساسة" ممكن أن تعرف على أنها من الممكن أن تقدم إلى صيانة متداخلة و مشاريع مستقبلية.

Samples of buildings of architectural significance in the survey area, which are heavily disfigured and dilapidated by inappropriate uses and/or lack of maintenance.

These should be preserved through adaptive reuse with compatible activities, and conservation interventions, including (restoration, cleaning and rehabilitation) according to the actual conditions of the buildings



نماذج أبنية ذات أهمية معمارية في منطقة المسح، و التي تشوه و تدمر كثيراً عن طريق الاستخدام غير الملائم و/أو فقدان الصيانة.
هذه يجب أن تحفظ عن طريق إعادة استخدام متأقلم مع أنشطة منسجمة، و صيانة التدخلات، متضمنة (الترميم، التنظيف و إعادة التأهيل) وفقاً للأوضاع الحقيقية للمباني.

Informal settlements in dilapidated structures and empty spaces resulting from demolitions. Localised redevelopment and urban infill interventions are to be foreseen in order to recover the continuity of the urban pattern and improve the environmental conditions.



الأسطوانات العشوائية في أبنية خربة و مساحات فارغة تنتج من الهدم . لذلك يجب النظر بإعادة بناء محلية و تدخلات إملانية حضرية من أجل تغطية الاستمرار في النموذج الحضري و تطوير الأوضاع البيئية.

Buildings with no particular architectural significance that are however integrated in the historic context. These can be rehabilitated or, when the conditions of repair are particularly bad, reconstructed with the same footprint and height.



أبنية من دون أهمية عمرانية خاصة و مع ذلك تدمج في المحيط التاريخي. هذه من الممكن أن يعاد تأهيلها أو ، عندما تكون أوضاع الترميم بالخصوص سيئة، تُبنى من جديد مع المحافظة على البصمة والارتفاع ذاتهما.

Samples of recent buildings, which are in contrast with the historic fabric. Most of them have been built with small housing units to be rented to low income immigrants. Type of interventions should enable their integration in the context (remodelling of the facades, renovation, up to the demolition and reconstruction)



نماذج من مباني حديثة، و التي تقابل النسيج التاريخي. معظمها أنشئت مع وحدات سكنية صغيرة لتؤجر إلى مهاجرين ذوي دخل متدني .

أنواع التدخلات يجب أن تمكن من تكاملهم في المحيط (إعادة بناء واجهات المباني، تصليح يصل إلى التهديم و إعادة البناء).







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Ministry of Municipalities
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مشروع
بناء القدرات لتحسين الإدارة الحضرية
مشاريع التصاميم الحضرية للمناطق التقليدية في البحرين
المرحلة الأولى: الاستراتيجيات والسياسات
دليل 2
الاستراتيجيات الاقتصادية

**Capacity-Building for Enhancement
Of Urban Governance
Urban Design Projects
for Traditional Areas in Bahrain
Stage One: Strategies & Policies**

**Manual 2
Economic Strategies**

February 2006

Manual of Economic Strategies

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- STRATEGY # 6: Priority for Mortgage Guarantee Program**
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- STRATEGY # 20: Shared Equity Investment**
- STRATEGY # 21: BDB Incubators in districts**

دليل الاستراتيجيات الاقتصادية

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Economic Issues: The Town

Strategy 1 : Occupancy Limits for Rental Property

Background:

More than any other barrier identified, the concentration of relatively low paid, and primarily bachelor laborers living in overcrowded conditions in the Urban Conservation Zones are deterring Bahraini families from returning to these areas. **If this issue is not addressed it is highly unlikely that the other strategies will have a meaningful impact.**

This should not be interpreted as precluding bachelor laborers from living in the Urban Conservation Zones. Rather it is to prevent these areas from being monolithic labor camps rather than economically, ethnically, generational, and culturally integrated neighborhoods. This may only need to be an interim strategy. The need for this provision may be eliminated over time either by market forces when Bahraini families begin to buy, rehabilitate and live in the traditional houses and/or when the Kingdom of Bahrain makes other provisions for foreign bachelor workers.

Implementation:

Occupancy in non-owner occupied dwellings would require at least 12 square meters of personal space per tenant. Further it would be required that there be no more than five persons per bathroom. There will need to be a transition period for compliance with this regulation. All property owners and major employers of bachelor laborers need to be informed of the new regulations, the time allowed for transition, and the penalties for non-compliance.

When the regulation is in full effect there will need to be a concerted effort for inspection and enforcement. This needs to be visible and consistent. There should be substantial penalties for violation and it should be the property owner(s) who are subject to the penalties, not the laborers. The penalties should be immediate upon finding of violation and should be substantially increased for a second violation and more so for subsequent violations. Once families begin to move back into the area they will provide an ongoing monitoring system and will report apparent violations requiring less active inspection on the part of the designated Ministry.

Note that the regulation only applies to non-family residents. There is a long tradition of multiple generations of an extended family living in a traditional house. This regulation should not discourage the reestablishment of that tradition. Under Bahraini law this would only apply to rental properties, not owner-occupied dwellings.

Time frame for this recommendation is *immediate*.

Reference: Strategy #1a and Strategy #1b, Economics Report



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Economic Issues: The Building

Strategy 2: Temporary Fee Waiver for Traditional Houses in Heritage Neighborhoods

Background:

Bahraini families, particular young families, have largely disappeared from the Urban Conservation Zones in Manama and Muharraq. But it is these families that will be essential to a sustained revitalization of those areas. Therefore a variety of incentives need to be put into place targeted to those young families (the *Pioneers*).

There is currently a municipal fee levied on residents for electricity and municipal services. It is currently charged at a monthly rate of 3% of rent for Bahrainis and 10% of rent for non-Bahrainis. This fee is paid as part of the electric bill. While this is a relatively small incentive, it would be one more inducement for early *Pioneers* to move in. This should only apply to traditional houses that have been or are being rehabilitated, and should be for a limited time period.

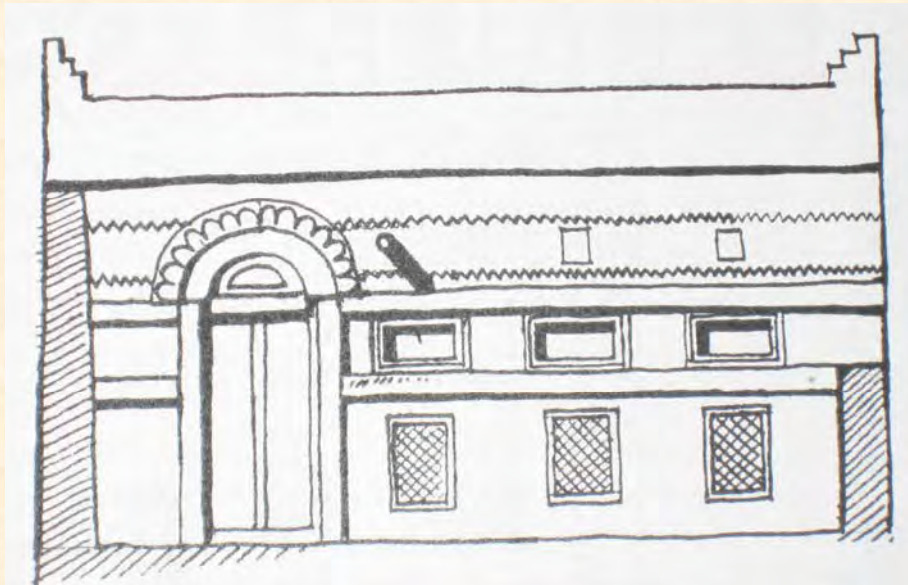
Implementation:

The municipal services fee would be waived for traditional houses in the Urban Conservation zones. This waiver would be temporary – two to three years – and then would return to the full level of service fee.

This implementation would require the concurrence of several Ministries and departments who receive portions of the Municipal Service Fee.

Time frame for this strategy is *immediate*.

Reference: Strategy #2, and 4.3 *Pioneers* discussion, Economics report



(Elevation from *Art & the Islamic World* John Yarwood)

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المسائل الاقتصادية: البناء

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Short term waiver of Municipal Service Fee could attract homeowners back into Urban Conservation Zones.

Economic Issues: The Town

Strategy 3 : First Right of Refusal to Government

Background:

Almost daily, traditional houses in the Urban Conservation Zones are being sold. Often this sale is made to GCC investors buying these older houses, tearing them down, and building new units. A ***First Right of Refusal*** is an acquisition devise that allows one party the priority opportunity to acquire a property on the same terms and conditions that the seller is willing to sell to another party.

Implementation:

This regulation would work as follows: anytime an owner(s) of a traditional house in the Urban Conservation Zone was "ready, willing, and able" to sell the property to a third party, the Kingdom of Bahrain, through the appropriate Ministry, would be given the opportunity to purchase the property on the same terms and conditions that had been agreed to by the parties to the proposed transaction. That Ministry would then have a finite time period – say thirty days – to meet that offer. If the Ministry chooses to exercise its First Right of Refusal then the seller receives the same amount of money on the same terms as they were otherwise willing to accept. If the Ministry waives its First Right of Refusal, or if the time period expires, then the transaction can go forward as originally proposed.

When ownership passes into public hands, it is not anticipated that this will be permanent government ownership. Rather properties acquired through this strategy might be resold to an owner willing to rehabilitate the property, might be used as a pilot project of the Ministry and then resold, or might be part of a "rent to own" program or other form of transaction to get the property both rehabilitated and back in the hands of a private owners.

Building demolition in Urban Heritage Zone

إزالة الأبنية في منطقة الحماية الحضرية

Sales or conveyances between family members would be exempt from the First Right of Refusal provisions that would apply to non-family buyers. Also the principle of *Shufa*, which essentially gives the first right of refusal to adjacent property owners, need not be replaced. The government's first right of refusal could come into effect only after the abutting property owners have declined to purchase the property.

Time frame for this recommendation is *immediate*.

Reference: Strategy#3, Economics report



المسائل الاقتصادية: المدينة

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Economic Issues: The Town

Strategy 4 : Two Year Freeze on Demolition

Background:

Every day more of the traditional houses of Bahrain are being lost, mostly through demolition. Traditional houses are *not* a renewable resource. **These are irreplaceable assets that once demolished are gone forever.** Many of the principles and strategies of this report will take time to begin to implement. If there is not a moratorium on demolition between now and when those guidelines can be implemented, property owners will rush to demolish before the new regulations are in place. Therefore, it is critical that there be a moratorium for an extended period on demolition. It is understood that under current law a two year demolition can be enacted which can be extended to three years with the consent of the Prime Minister.

Implementation:

A moratorium on demolition does not necessarily mean that no house can ever be demolished during this period, but rather that any request to demolish a traditional house in the Urban Conservation Zones is subject to review and denial by the appropriate Ministry. Ultimately, urban design guidelines for the Conservation Zones will impose significant restrictions on demolition of traditional houses.

In those circumstances where demolition is approved, the property should still come under the provisions of strategies which require the documentation of the property being razed and a process of salvaging those traditional building components that could at a later date be reincorporated into the rehabilitation of another dwelling.

Time frame for this recommendation is *immediate*.

Reference: Strategy #4, Economics report



Building demolitions in Urban Conservation Zone

إزالة الأبنية في منطقة الحماية الحضرية

المسائل الاقتصادية: المدينة

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Economic Issues: The Building

Strategy 5 : Priority for Housing Loan for those Moving into Traditional Buildings

Background:

There currently exists a program of the Bahraini government to provide housing loans up to 40,000 BD to young families to buy their first home or flat. It is estimated that there are between 30,000 and 40,000 families on the waiting list for this program and that it takes from 4 to 5 years to reach the funding stage.

Moving applicants to the top of the priority list if they are willing to move into a traditional house in the Urban Conservation Zones could have a major impact on those areas without having a net cost to the Ministry of Housing. This program would specifically target the *Pioneers* who would be willing to move into the areas, even before they are fully satisfactory for families, in exchange for receiving their allocation sooner.

Implementation:

Loan applicants choosing to buy a traditional house in one of the Urban Conservation Zones would receive first priority when funds are available to provide additional housing loans under the existing program. This strategy applies only to Ministry of Housing loans, not loans from private, commercial banks.

Time frame for this strategy is *short term* (implement within one year,
Reference: Strategy #5, and 4.3 *Pioneers* discussion Economics report.



Borrowers willing to buy traditional houses would receive priority for housing loans

(Elevation from *Art & the Islamic World*, John Yarwood)

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Economic Issues: The Building

Strategy 6 :Priority for Mortgage Guarantee Program

Background:

The Kingdom of Bahrain has a housing program for families to borrow money to acquire a home. However, the Housing Bank does not have the resources to meet all of the demand that exists. As of the date of writing of this report, a proposal is going through the approval processes at the Cabinet level to create a mortgage guarantee program. This would encourage commercial banks to make real estate loans for prospective homeowners by providing assurance of government payments in the event of default on the loan.

Implementation:

As with the strategy for priority for direct Housing Bank loans, under this strategy potential homeowners willing to buy in the Urban Conservation Zones would receive priority for the mortgage guarantee program.

Time frame for this strategy is *short term* (implement within one year)

Reference: Strategy #6, Economics report



Local bank makes mortgage loan to Bahraini family to buy traditional house in Urban Conservation Zone

Ministry of Housing makes loan guarantee to local bank
وزارة الإسكان تقدم قرض مضمون للبنوك المحلية



(Elevation from Art & the Islamic World, John Yarwood)



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Economic Issues: The Building

Strategy 7: Two Lifetime Loans Instead of One if the First Loan is for a Traditional House in an Urban Conservation Zone.

Background

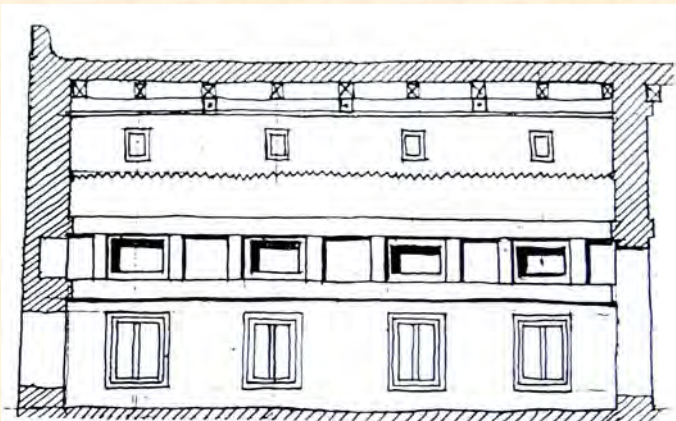
The current home mortgage loan program of the Housing Bank is only available once per family. Allowing a family the opportunity for two such loans has several impacts. First, it gives those *Pioneer* families the confidence that if the Urban Conservation Zones are not improved over time as promised, they are not stuck there for life but can have the opportunity to move elsewhere. Second, even if the family decides to move by utilizing the second housing loan, at a minimum there is now one more traditional house that has been rehabilitated and brought up to modern and livable standards. Third, if for family or lifestyle or other reasons the initial family decides to move elsewhere, an opportunity for another family to move in is created.

Implementation:

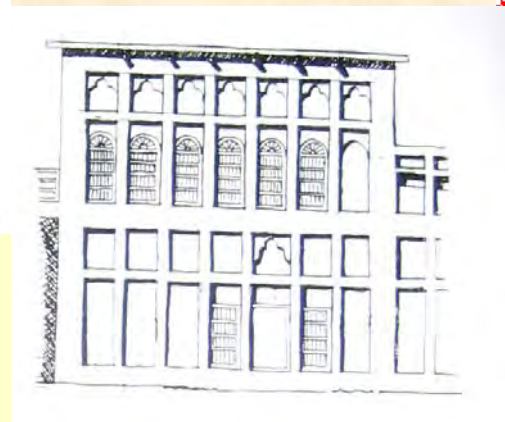
If a family's first use of a Housing Bank mortgage loan is for a traditional house in an Urban Conservation Zone, they would be entitled to use the housing loan program a second time. There should be a minimal time period, however, before receiving the first loan and receiving the second – perhaps five to seven years. This requires the initial occupants to remain in the neighborhood to provide stability in the early years of revitalization. The Ministry of Housing would need to be the implementer of this strategy.

Time frame for this strategy is *short term* (implement within one year)

Reference: Strategy #7 and 4.3 *Pioneers* discussion, Economics report



Two loans would be available if the first is used
for a traditional house in the Urban
Conservation Zones



(elevations from *Art & the
Islamic World*, John Yarwood)

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Economic Issues: The Town

Strategy 8 :Land Swaps to Consolidate Ownership

Background:

Land swaps have a well-established history in the Kingdom of Bahrain, often for highway expansion or other public projects. This strategy can also be effectively utilized to acquire and subsequently resell houses that are currently being rented to bachelor laborers in overcrowded conditions.

If the strategy was utilized to consolidate ownership, members of the original owners of the property should be given a ***First Right of Refusal*** to reacquire the property on a less dispersed ownership basis. If no one in the family is interested, the government could sell to anyone. There is a social and cultural value in the ownership of a property by a single family over multiple generations. Giving the family the ***First Right of Refusal*** allows this tradition to continue.

Implementation:

After the land swap, the government obviously becomes the owner of the property, but that ownership should not be considered permanent. The government should use this period of ownership to:

- a) use that property for a pilot project;
- b) stabilize the property and sell it to an owner who would complete the rehabilitation; or
- c) fully rehabilitate the property and sell it to a new owner.

The property to be received under the land swap could be in one of the ***new towns*** being developed, or at any other location that is acceptable to both parties in the transaction. The property to be received would need to be of equal or greater value than the property being traded.

Time frame for this recommendation is ***short term***
(implement within one year).

Reference: *Strategy #8, Economics Report*

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Economic Issues: The Town

Strategy 9 : Training Program for Craftsmen

Background:

There appears to be a shortage of craftsmen in Bahrain who are familiar with and competent in the building methods and appropriate materials for the rehabilitation of traditional houses. If the attention to the Urban Conservation Zones is going to be ongoing rather than a short-term effort, it is vital that there be many more workers trained in the proper techniques and methods.

Implementation:

There currently exists the Craftsman Center in al-Jassara. It is possible that that institute could perform this function. A variation of this strategy could be to provide seed money to individuals with the skills to open training centers within the traditional areas, thereby reestablishing the Mu 'alim and apprentice relationship

There needs to be, however, a formal relationship between the training and the efforts within the Urban Conservation Zone. Pilot Projects undertaken by various Ministries within the Urban Conservation Zones should also serve as a "hands-on" opportunity for the trainees. It would be necessary to provide a nominal salary for apprentices undergoing training.

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #9, Economics Report



Apprentices could learn from experts such as gypsum carver Nagui

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Economic Issues: The Building

Strategy 10 : Step-Down Rent Subsidy for Young Couples

Background:

Not all young families who would be willing to live in the Urban Conservation Zones financially prepared to become owners. Thus, some of the *Pioneer Strategies* need to be directed to renters as well as owners. At the same time, people in the private sector who buy and redevelop properties may need rather significant rents to justify the required investment.

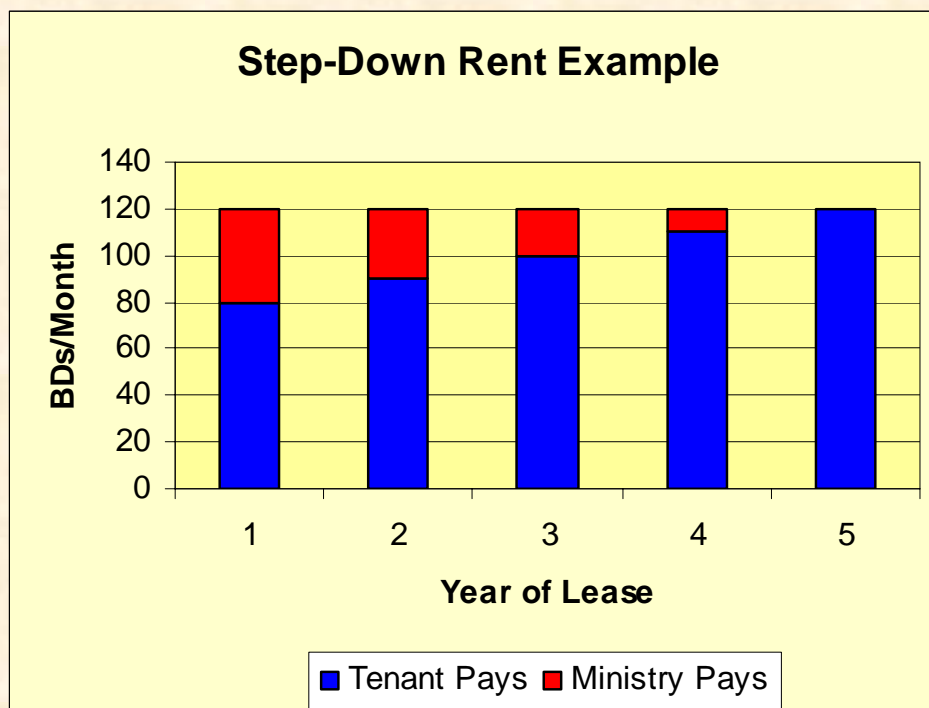
This strategy accomplishes two goals. First, there is a financial incentive for a young family to move into the area before it has improved to the level that they would normally find acceptable. Second, it makes their rental unit more affordable as their own financial condition and income improves.

Implementation:

A step-down rent subsidy would work like this: Say the market rent for the unit was 120 BD per month considering the cost of acquiring and rehabilitating the property. As an enticement to get a *Pioneer family* who wished to rent to opt for a traditional house in the Urban Conservation Zone they would sign, for example, a five year lease at 120 BD per month. But the first year they would only have to pay 80 BD per month, with the appropriate Ministry paying the difference. The second year the tenants would pay 90 BD while the Ministry paid 30. In year three tenants 100 BD, the Ministry 20 BD; year four tenants 110 BD, Ministry 10. This program could also work with properties directly owned by the government.

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #10 and 4.3 *Pioneers* discussion, Economics Report



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Economic Issues: The Building

Strategy 11 : Specialized Loan Program for Rehabilitation

Background:

There seems to be an absence, either in commercial banks in Bahrain or in the financial institutions directly connected to the government, of any real estate loan programs directly focused on the rehabilitation of older and traditional buildings. Lenders would prefer to lend on new buildings where the costs are more predictable.

Lenders need a degree of predictability as to costs. It is generally true that until the skills of architects, contractors, tradesmen, and related professions are improved with experience, rehabilitation can be widely variable as to costs. The good news is that once experience has been gained and some members of the design and building professionals have made the rehabilitation of traditional buildings their specialty, both the costs will fall and the predictability of the costs will improve. **But without a customized loan program directed toward the rehabilitation of traditional buildings, the likelihood of private investment in those structures is significantly reduced.**

Implementation:

A financial mechanism needs to be developed to finance the rehabilitation of traditional buildings. This needs to be done either by creating a specialized loan program within one of the Ministries or a government-related financial institutions or in one or more of the commercial banks. It might need to be combined with a mortgage guarantee program.

A condition for receiving this loan would be the requirement to do the rehabilitation within appropriate design guidelines.

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #11, Economics Report.



A specialized loan program directly focused on the rehabilitation of traditional buildings needs to be developed. Rehabilitation would have to be done within appropriate architectural guidelines.

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Economic Issues: The Town

Strategy 12 : Office of Design Assistance

Background:

It is evident that there is a lack of broad understanding about the appropriate treatment for traditional buildings in the Urban Conservation Zones. Some of this comes about by trying to do repairs, maintenance, rehabilitation and/or modification as cheaply as possible. But in other instances, people are willing to "do the right thing" but literally do not know what the "right thing" is.

Implementation:

A design assistance office would be a department of the appropriate Ministry but preferably physically located within the Urban Conservation Zone. The program's purpose would be to broadly educate the public on how the appearance of any traditional, non-traditional, or planned infill structure is an irreplaceable individual piece of the overall character of the Urban Conservation Zone.

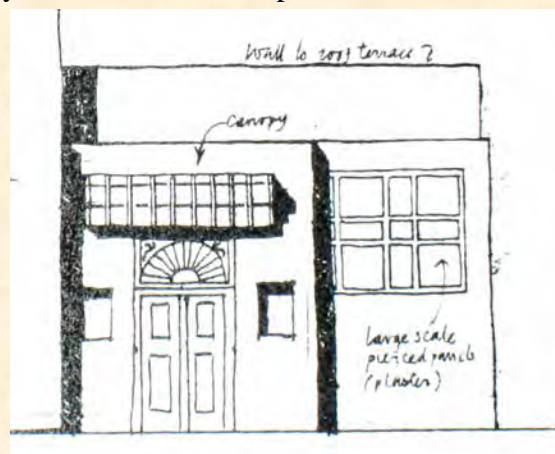
The design manager would schedule and conduct free site visits at the request of building owners, architects, contractors, or members of the Municipal Council to discuss appropriate rehabilitation alternatives. The persons involved in design assistance could either be government employees or individuals contracted to provide these services.

Consideration could be given to establishing a Qadi for each Urban Conservation Zone who could assist in resolving conflicts in property design matters but who would also add community credibility to the office of design assistance.

Seminars, workshops, slide presentations and other materials would also be offered by the design manager to inform building owners, merchants and the general public about proper Urban Conservation Zone design, traditional buildings, and building rehabilitation and maintenance. Copies of the design guidelines for the Urban Conservation Zone would be available and free at the Office of Design Assistance.

Time frame for this recommendation is *short term* (implement within one year)

Reference: Strategy #12, Economics Report



Specialists would provide design and conservation assistance to property owners.

Elevation from *Art & the Islamic World*, John Yarwood

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Economic Issues: The Ferij

Strategy 13: Zone for Mixed Use, especially Live/Work

Background:

In the world economy there is a rapidly emerging segment of business activity made up of small (1-4 person) firms providing professional services. Among the categories of these firms are consultants on a variety of subjects, architects, technical writers, software writers, graphic artists, advertising firms, and others. This is happening worldwide but is particularly growing in well-educated and increasingly prosperous countries like the Kingdom of Bahrain. As varied as these firms are many of them possess five common denominators:

- 1) they are small;
- 2) they are very entrepreneurial;
- 3) they often work on a global, or at least a regional level;
- 4) they rarely have client contact **in their office** but rather deal with their client at the client's office, on the phone, over the internet, and through other electronic means;
- 5) they have a strong preference for the "differentiated" neighborhoods, for locations with distinctive character, for a "sense of place". Thus, frequently these firms are attracted to older, historic and traditional areas.

Moreover, many of these professionals prefer to have their home and their office in the same place. Many parts of the world refer to this as live/work space. Unlike shops selling retail goods, or firms with significant client traffic going in and out of the office, **these live/work firms have very little negative impact on the neighborhoods in which they are located.** On the contrary, they usually provide an excellent market for nearby shops, restaurants, and other professional service providers. Many of the traditional buildings are well suited for this type of live/work space. That use should be encouraged.

Implementation:

Zoning laws should be adjusted to specifically allow this live/use activity in most areas within the Urban Conservation Zones. There should be appropriate limitations, for example prohibiting more than 3 outside employees from working in one of these units and that neighbors could be assured that no dramatically increased levels of pedestrian or vehicular traffic would be generated.



Type of building well suited for live/work space

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #13, Economics Report

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Economic Issues: The Town

Strategy 14 : Archeological Salvage (Building Materials Bank)

Background:

Even if a demolition moratorium is imposed, over time some traditional buildings will still be ultimately demolished.

Implementation:

In those cases, two requirements should be imposed:

- 1- There needs to be a complete documentation of the structure, based on guidelines established by the appropriate Ministry, and to present that documentation before the permit for demolition is permitted.
- 2- Elements of traditional construction – timbers, shutters, doors, and especially coral will be salvaged and retained for reuse in other traditional buildings.

The most important role for the government is to fully encourage the recycling of materials from these buildings and establishing the regulatory framework that is necessary. The process of collecting, storing, and reselling these salvaged materials could be done within a Ministry. However to minimize government involvement it could be done by an NGO established specifically for this purpose, or by a private company.

Time frame for this recommendation is *short term* (implementation within one year)

Reference: Strategy #14, Economics Report.



When demolition does occur, distinctive architectural features, such as these decorative wooden newel posts and coral block used for foundations and piers (hadjar al bahr) should salvaged and retained for reuse in restoration projects of other buildings.

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Economic Issues: The Ferij

Strategy 15 : Parking Permits for Residents Only

Background:

Parking has been identified as one of the most challenging barriers that prevent Bahraini families from moving back into the Urban Conservation Zones. While the parking issues is also addressed in other portions of this report, it needs to be kept in mind that even though parking is a function of physical planning and urban design, it has major economic ramifications.

Implementation:

This proposed strategy would limit parking within the Urban Conservation Zones (or in particular areas within the UCZs) to residents of the Zone only. Applicants would go to the appropriate Ministry and provide evidence that they were residents of the Urban Conservation Zone. This evidence could be a lease or a municipal services bill or other residency document. When that evidence is provided, a sticker would be given to identify that car as belonging to a resident. This could be further limited by only allowing one or two stickers per household. The stickers would have to be renewed each year, and could be part of the same process as renewing licenses for the automobiles. This provision applies only to parking, and not the right to travel through on public rights-of-way.

Some accommodation would need to be made for short term visitors (such as temporary one week passes) and designated parking areas outside the immediate *Ferij* for household guests and heritage tourists. Additional parking strategies are identified elsewhere in this report.

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #15, Economics Report



Excess automobile traffic in Urban Conservation Zones often leads to inappropriate and ad hoc parking "solutions".

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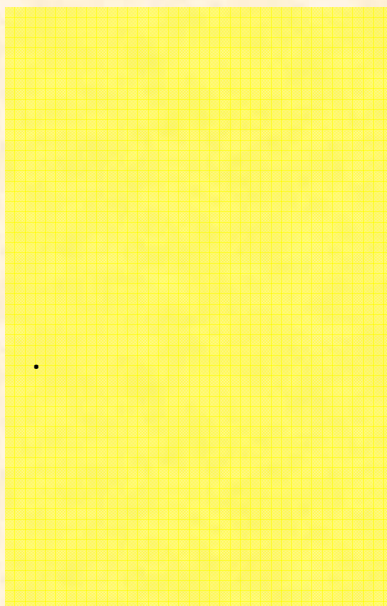
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Economic Issues: The Ferij

Strategy 16 : BDB Service Centers in Districts

Background:

The Bahrain Development Bank (BDB) has an excellent program of Service Centers to provide information and technical assistance to potential businesses. They currently have plans to expand the Service Centers to additional locations in the future. Having one or two of those Service Centers located in the Urban Conservation Zones in Manama and Muharraq could be a valuable contribution to the future economic success in those areas. Further, since there seems to be a skepticism on whether the government is serious about taking steps to revitalize these areas, having a Service Center in the UCZs would be a positive indicator of the government's seriousness.

Implementation:

Ideally the Service Center would be located in a rehabilitated traditional building that could serve the additional role of demonstrating how buildings can be appropriately rehabilitated yet still meet current needs.

The Bahrain Development Bank should be encouraged to implement this strategy.

Time frame for this recommendation is *short term* (implement within one year).

Reference: Strategy #16, Economics Report



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Economic Issues: The Building

Strategy 17 : Technical Assistance to Establish Family Ownership

Background:

Some families have resolved the problem of multiple ownership by forming a company that owns the property. From a legal, financial, and management perspective, it is much easier to deal with the issues of multiple ownership if that ownership is represented by *shares in a company* rather than *shares in a property*. Lines of authority can be established, individual responsibility assigned, transfer of interests is simplified, financing becomes much easier.

This can be a very effective means for families to maintain ownership over multiple generations and yet not have the problems of management and maintenance that are very visible today. Under both Bahraini civil law and *Shari'a* law, there are mechanisms to forum such companies. The problem is that this can be a somewhat complex process which not every family is prepared to undertake.

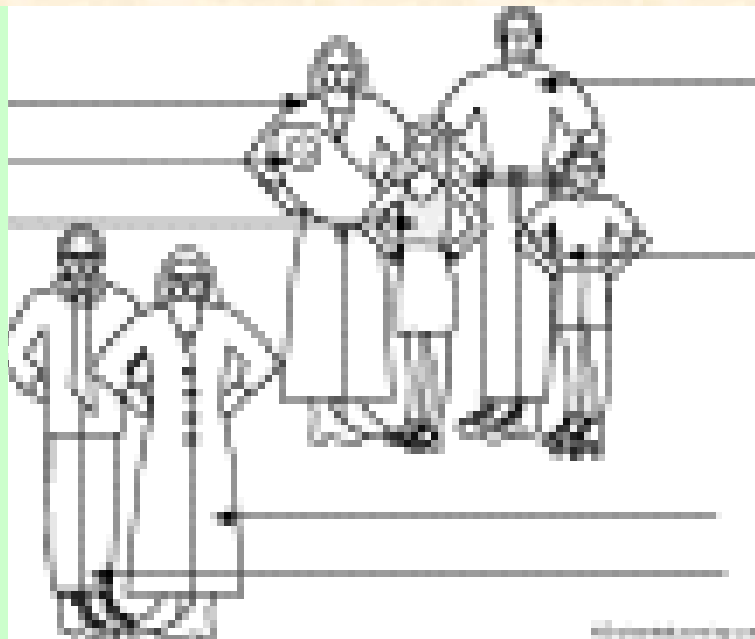
Implementation:

Providing technical assistance on legal and financial issues, through the appropriate ministry or by a Qadi established for this purpose, could encourage more families to undertake this approach that may be reluctant to do so today.

Time frame for this recommendation is *intermediate* (implement within three years).

Reference: Strategy #17, Economics Report

Technical assistance to Bahraini families on how to form companies for family ownership of property



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Economic Issues: The Building

Strategy 18 : Stabilized Shell with stub-in Mechanicals for young couples (*finish it yourself*)

Background:

Because of development pressures and overcrowding, prices for properties in the Urban Conservation Zones – especially properties in good, habitable condition can be beyond the financial reach for many young Bahraini families. An alternative that could be very attractive to some young **Pioneer** couples is to acquire a property in "shell" condition and finish it themselves.

Implementation:

Under this program the government would acquire a traditional house, stabilize the exterior, and install basic mechanical systems (water, sewer, electrical, air conditioning) but no interior finish and no fixtures (sinks, bathtubs, etc.). The family would then acquire the property more cheaply than a finished house, and complete it, doing the finish work by themselves, their friends, and their family over time as they are able.

Once the existence of a market demand is established, this is a function that could easily be taken over by a private sector company, eliminating an ongoing government role in this **regard**.

Time frame for this recommendation is **intermediate** (implement within three years).

Reference: Strategy #18 and 4.3 **Pioneers** discussion, Economics Report



Deteriorated traditional houses would be acquired by the government, stabilized, provided with basic services, and then resold to a Bahraini family to finish.

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ترميمات للأجزاء الرئيسية من الدور التقليدية وتكون متوسطة التكلفة والإبقاء
على الانتهاءات المكلفة الثمن

Economic Issues: The Building Strategy 19 : Rent to Own Programs

Background:

Not all young families who would be willing to live in the Urban Conservation Zones are financially prepared to become owners. Furthermore, some of the *Pioneer Strategies* need to be directed to renters as well as owners. Some young *Pioneer* couples may not be ready or able to buy a house, but would like to live in the area.

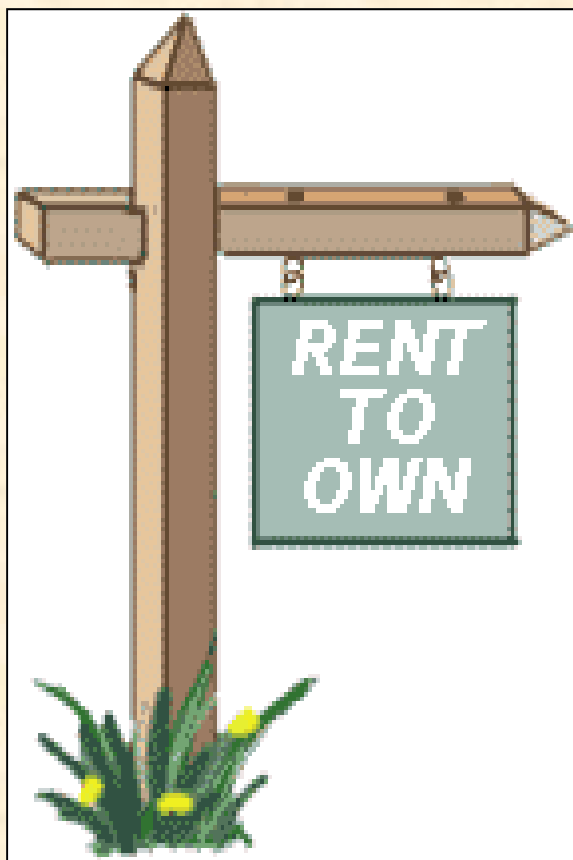
Implementation:

Under this program, the government would acquire a traditional house, complete the rehabilitation, and rent the building to a Pioneer couple. For a period of time (five to ten years) a portion of the rent they pay would apply to the ultimate purchase price if they eventually choose to buy the house. For example if the agreed rent is 120 BD per month, perhaps 10 BD per month would apply to the ultimate purchase price. After five years, then, if they choose to buy, they have already accumulated 600 BD to apply to the purchase.

In this strategy, once a market demand is established, the private sector should be encouraged (and may well find it very profitable) to replace the government's role in this activity.

Time frame for this recommendation is *intermediate* (implement within three years).

Reference: Strategy #19 and 4.3
Pioneers discussion, Economics Report



Sign can be seen in the Traditional Areas
علامة يمكن مشاهدتها في المناطق التقليدية

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Economic Issues: The Building Strategy 20 : Shared Equity Investment

Background:

Many of those who will choose to be *Pioneers* will be young families who have not yet accumulated significant wealth. Perhaps they are eligible for the 40,000 BD housing loan, but to purchase their unit will cost, say, 80,000 BD, but they only have 20,000 BD to apply as down payment.

Why have an equity participation rather than simply a loan? Because under a loan regular payments have to be made. This arrangement allows more young couples to qualify to buy houses without overburdening them with too high of monthly payments.

Implementation:

A governmental or quasi-governmental entity would agree to participate for an intermediate term period – probably 5 to 10 years – as an equity investor in the project. In the above example, the young couple would put in 20,000 BD as equity and the government entity would put in 20,000 as equity. **The right of occupancy and all of the responsibilities of ownership would remain with the couple.** This would include making all of their loan payments, the Municipal fees, regular maintenance, and all other costs of occupancy.

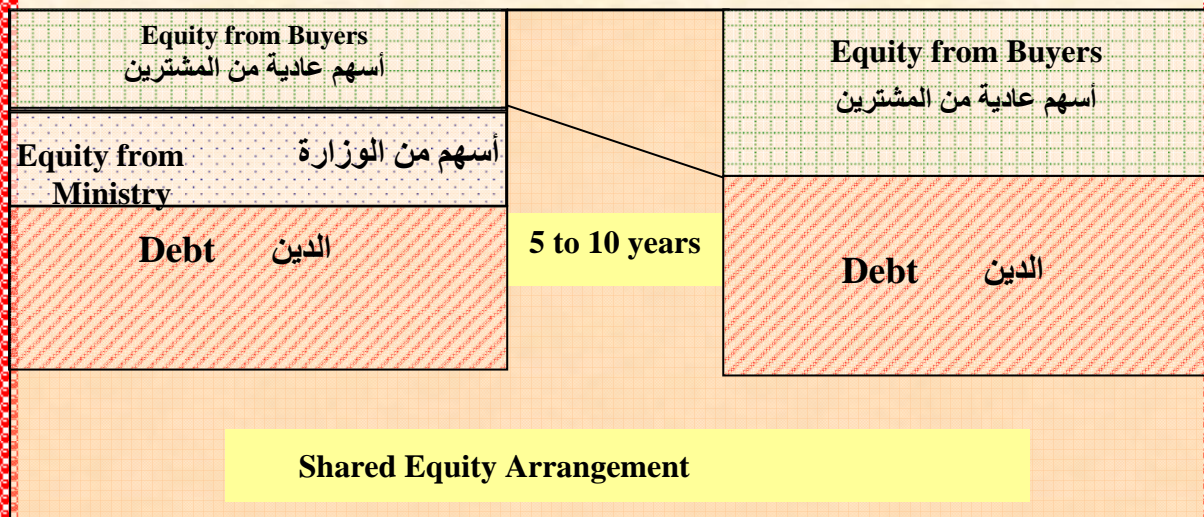
If during the specified period the couple decides to sell the property, one-half of the equity (i.e. the selling price less the amount required to pay off the mortgage loan) would go to the couple, and the other half would go to the government entity.

If the property were ultimately sold at a profit, the profit would be divided. If the property were sold at a loss, both sides would share in the loss. Since this would be shared equity rather than a loan, it should not be considered the payment of interest under Shari'a law.

If by the end of the period the family had not yet sold the property, then the government entity would be entitled to be repaid the amount of their shared equity plus a reasonable profit.

Time frame for this recommendation is *intermediate* (implement within three years).

Reference: Strategy #20 and 4.3 *Pioneers* discussion, Economics Report.



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Economic Issues: The Ferij

Strategy 21 : BDB Incubators in Districts

Background:

The Bahrain Development Bank (BDB) has a business incubator program that has had measurable success. They currently have plans to create additional business incubator locations. At present, the plans are to locate these incubators in industrial areas of Bahrain.

Since business attraction needs to be part of the overall revitalization strategy, getting businesses to locate in the UCZs initially in the BDB incubators would be a major first step in that process. Further, since there seems to be a skepticism on whether the government is serious about taking steps to revitalize these areas, having an incubator in the UCZs would be a positive indicator of the government's seriousness.

Implementation:

As an alternative or an additional location, this recommendation is to locate one or two business incubators within the Urban Conservation Zones of Manama and/or Muharraq.

Ideally the incubator would be located in a rehabilitated traditional building that could serve the additional role of how buildings can be appropriately rehabilitated yet still meet current needs. The facilities that the BDB incubator currently provides, such as independent work space, reception area, conference room, etc, could certainly be accommodated in some traditional buildings. It may well prove sensible to co-locate the incubator and the Service Center in the same rehabilitated traditional building.

The Bahrain Development Bank should be encouraged to implement this strategy.

Time frame for this recommendation is *intermediate* (implement within three years).

Reference: Strategy #21, Economics Report

The current successful BDB incubator program housed in this building would be expanded into additional locations in the Urban Conservation Zones.



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Economic Issues: The Town

Strategy : Funding Strategy 1 – Earmark fees Generated for Reinvestment in Area.

Background:

A municipal fee (electric and municipal services) is charged monthly at 3% of rent for Bahrainis and 10% of rent for non-Bahrainis and is paid with electric bill. These funds go to pay for electrical service, but also to pay for other municipal services and other activities of the Ministry of Municipalities. If, for a finite period, all of the funds raised were committed to be reinvested inside the area (earmarking of funds) there would be both a predictable source of funds and provide concrete evidence of the government's long-term commitment to the Urban Conservation Zone.

Implementation:

The implementation of this strategy would require the concurrence of several departments and Ministries, including the Ministry of Finance and National Economy. Politically and legally it may be more appropriate for each affected Ministry to make a commitment that it would invest in the area an amount no less than its share of the Municipal Service fee it received. This commitment would be limited to the agreed upon transition period.

Reference: Funding Strategy #1, Economics Report



Revenues raised in the Urban Conservation Zones would be reinvested in those areas.
الموارد المالية التي ترفع في مناطق الحفاظ الحضرية يمكن إعادة استثمارها في تلك المناطق

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Economic Issues: The Town

Strategy : Funding Strategy 2 – Transferable Development Rights

Background:

When a property is zoned to allow greater density than that at which it is currently developed, there is often economic pressure to tear down an existing, smaller building and replace it with a building that fills the "**zoning envelope**". Transferable development rights (TDRs) are used to move density of development from areas that need some protections (such as heritage areas) to areas where greater density is desired or acceptable. The protected areas are referred to as *sending areas* and the development areas are called *receiving areas*.

Implementation:

In simplest terms, it works like this: Property Owner A owns a lot in a protected area that is 1000 square meters and has a two story traditional building that covers the entire lot. However, the zoning would allow for a four-story building to be erected on the site. Therefore, the existing lot has 2000 square meters of unused development rights. (1000 m² per floor X 2 floors).

In a receiving area a developer (Property Owner B) plans to construct a five story building of 2000 square meters per floor or a total of 10,000 square meters. This area has a height limitation of five stories *But*, the zoning law has designated this area as a *receiving area*. This allows a building to be built one extra floor (the bonus) if the developer acquires the *development rights* from the *protection zone* .

The developer then purchases the development rights from Property Owner A and adds the extra floor. In exchange for this payment, the parcel of land in the *protection zone* is *permanently* limited to two stories of development.

Thus, in exchange for a payment, Property Owner A gives up his right (and the right of subsequent owners) to develop a four story building on that site..

This is a complicated tool and would need study and analysis as to how it might work in Bahrain. **There are both cultural and legal reasons why it is highly unlikely to be implemented in the near future. Further, it is possible that the current zoning may change in the future.** But if and when the time is right, TDRs would become a very valuable tool for protecting traditional buildings in the Urban Conservation Zones.

Reference: Funding Strategy #2 and Appendix 2, Economics Report

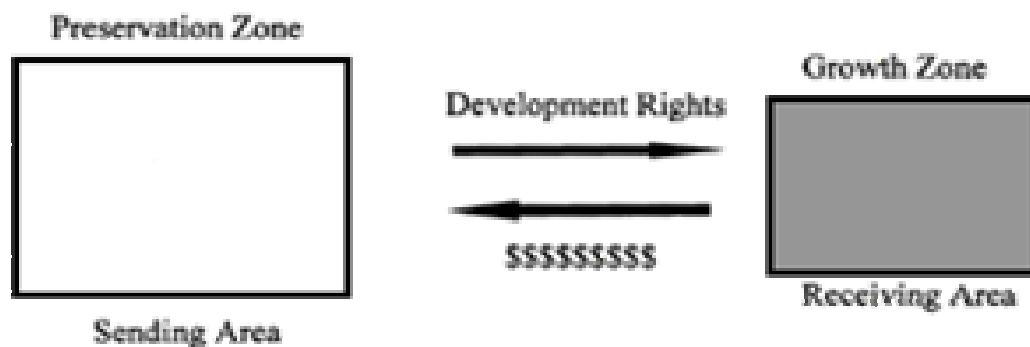


Figure 1. Transfer of Development Rights (Platt, 1996)

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Economic Issues: The Town

Background:

Maintenance of traditional houses is an ongoing process. Even if all the money were available today to rehabilitate every traditional house in Manama and Muharraq, if there is not ongoing maintenance, in a decade or less those houses would again be on their way to demolition.

If the market is repositioned so that most houses are owner occupied by Bahraini families, many of them will have the motivation and the financial means to make those ongoing repairs that any building – old or new – requires. However, there will also always be some long-time owners who simply cannot afford to make the expenditures for proper maintenance of these traditional houses. There will also be projects that require an additional injection of funds if they are going to be completed in a timely and appropriate fashion.

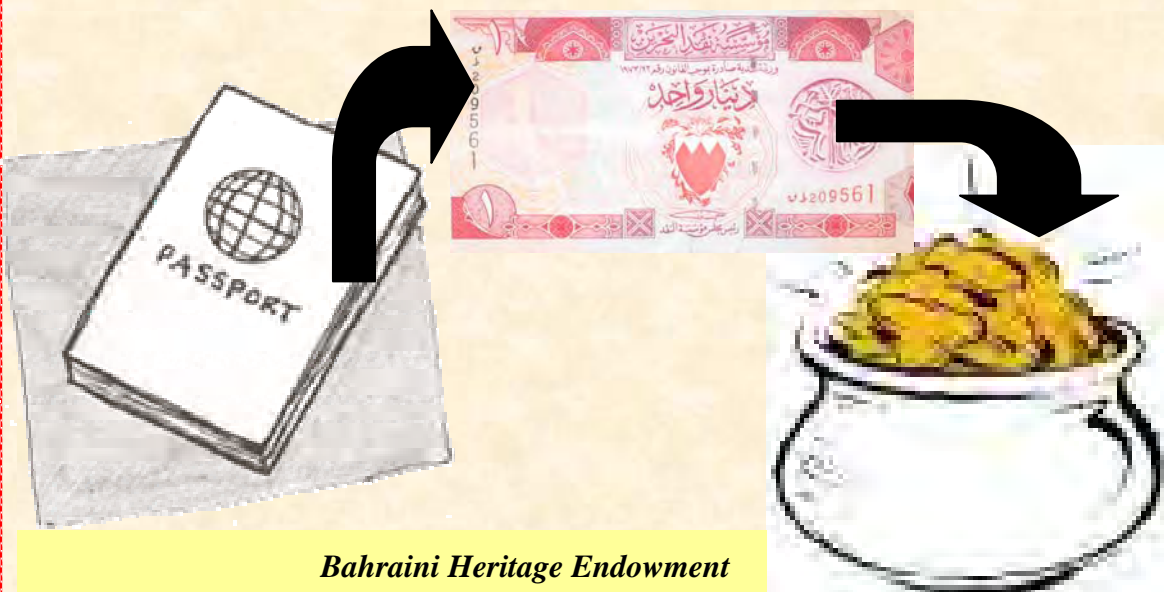
Implementation:

The Bahraini Heritage Endowment would be created. This would be an ongoing fund to assist those who need financial help to properly maintain their traditional houses, to rehabilitate heritage structures, and to pay for other activities related to the built heritage of the Kingdom of Bahrain.

The Bahraini Heritage Endowment would be funded by a 1BD visa fee, payable at the airport when visitors arrive. The amount per person is very modest, but with hundreds of thousands of arrivals per year in just a few years, the Bahraini Heritage Fund could have significant resources. Visitors are privileged to be allowed to share the great built heritage of the Kingdom of Bahrain; having to pay 1BD upon departure (or arrival) is a very low price to pay for that privilege. Because of GCC agreements, citizens of other GCC countries would be exempt from this additional visa fee.

The primary decisions to be made in establishing the Bahraini Heritage Endowment are:

- 1) how is the money divided;
- 2) who are eligible recipients;
- 3) what are the criteria to make the award decisions.



المسائل الاقتصادية: المدينة

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Economic Issues: The Ferij

Strategy : Pilot Project 1 – Create *Family Block*

Background:

Large portions of the older areas of both Manama and Muharraq have seen the departure of most Bahraini families who are then replaced primarily by foreign bachelor laborers. The repopulation of these areas by Bahraini families is essential to the physical and economic revitalization of the areas. This will inherently be a gradual process, but it will need multiple *catalysts* for this to occur. Identifying and redeveloping an entire block of housing exclusively for occupation by Bahraini families would be an effective catalyst.

Implementation:

The government should identify a reasonably intact block of traditional houses that could be acquired and rehabilitated at one time. These properties would then be resold to young Bahraini families. This "critical mass" of *Pioneer families* could demonstrate the viability of the Urban Conservation Zones.

There is a second alternative in the situation where most properties are still owned by but not occupied by Bahrainis but, if rehabilitated, would be reoccupied by Bahraini families. In this alternative the government would do the exterior rehabilitation and necessary improvements in building systems without the necessity of acquiring and reselling of the property.

Time frame for this recommendation is *intermediate* (within one year).

Reference: Pilot Project Strategy #1 and 4.3 *Pioneers* discussion, Economics Report



This is the type of a block of largely intact, traditional housing that should be found for this pilot project.

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Economic Issues: The Town

Strategy: Pilot Project 2: Create *Heritage Conservation Service Center*

Background:

Several of the strategies recommend a physical presence within the Urban Conservation Zones of various governmental or governmentally supported activities. These include: an Office of Design Assistance and perhaps a Qadi (Strategy # 12); BDB Service Centers in the districts (Strategy # 16); BDB. Incubators in districts (Strategy # 21). Additionally there are other recommended services that could be more effectively provided if the appropriate office were located within the Urban Conservation Zones. These include: Specialized Loan Program for Rehabilitation (Strategy # 11), Resident Parking Permits (Strategy # 15), Technical Assistance to establish family ownership companies (Strategy #17) and others.

It would be very beneficial if all of those services were located together in a "**one stop shop**" for issues dealing with the Urban Conservation Zone.

Implementation:

The appropriate Ministry could acquire and rehabilitate a traditional building in one or both of the Urban Conservation Zones (one of the larger, courtyard style houses would be ideal) to serve these functions. When merchants' association, a residents' association, a property owners' association, etc. are formed they could meet and, if necessary, have offices in this Center as well. Additionally, information about the available incentives and special programs for the Urban Conservation Zones would be available here.

A Heritage Conservation Service Center located within the Urban Conservation Zones would truly demonstrate the governments sustained commitment to revitalizing the traditional buildings and the older neighborhoods of Manama and Muharraq.

Time frame for this recommendation is *intermediate* (within one year).

Reference: Pilot Project Strategy #2, Economics Report

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Economic Issues: The Town

Strategy : Pilot Project 3- Urban Conservation Districts as *laboratories* for Government Programs

Background: Not *exist* in Bahrain.

Implementation:

This recommendation is more than a single proposed pilot project, but rather a suggestion that the two Urban Conservation Zones be used as "laboratories" for an entire range of government programs. They could be the "testing grounds" for ideas from various Ministries that seem to be viable but need to be tested on a small scale before being adopted Kingdom wide.

An excellent example of this is a program that has been proposed but not yet formally authorized and was mentioned earlier in this report. This is a program wherein the risk would be shared between the government and commercial banks against foreclosure of mortgage loans.

A program such as is being suggested could be a very valuable housing strategy for the entire Kingdom. Using the two proposed Urban Heritage Zones as the "laboratories" to test the idea would be an excellent way to begin.

Time frame : for this recommendation is *intermediate*
(implement within one year).

Reference: Pilot Project #3, Economics Report



Urban Conservation Zones in Manama and Muharraq should be *laboratories* for an entire range of proposed government programs.

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Economic Issues: The Ferij

Strategy: Marketing, Promotional and Organizational Strategies

Background:

The strategies identified and recommended earlier in this report are primarily economic and financial strategies. But the revitalization of older residential areas – both commercial and residential – is more likely to be successful sooner if there is an accompanying marketing and promotional strategy.

Implementation:

- There need to be established **annual events** in the neighborhoods. These might be celebrations, festivals, special market days, or ethnic gatherings.
- There needs to be the public **celebration of even small improvements**. It matters less the size of the improvement or how much is left to be done, then some symbol of the reversal of the present condition.
- Businesses will generally do better, last longer, and be more profitable if there is an established **merchants' association**.
- Likewise, it would be useful if a **residents' association** were established. This is particularly important in the early years when the *Pioneer Families* are moving in. They need to know that their issues and problems can be raised to the government with more than a single voice.
- Landlords will all do better if they work in a cooperative manner so the creation of the **property owners association** may be warranted.
- Organized efforts should be undertaken to **use early pioneers** as an essential component of an overall marketing strategy.
- Every pilot project and every property rehabilitated by the Ministry in charge of the revitalization of the Urban Conservation Zones should hold **open houses**.
- Changing the color of the **street signs and building numbers** within the Urban Conservation Zones.
- Target in marketing efforts **families who used to live in the area** themselves, or who have a family connection to the area.

Time frame for this recommendation is *intermediate* (implement within one year).

Reference: Marketing, Promotional and Organizational Strategies and 4.3
Pioneers discussion, Economics Report

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United Nations
Development Program



Kingdom of Bahrain



Ministry of Municipalities
and Agriculture Affairs

مشروع
بناء القدرات لتحسين الإدارة الحضرية
مشاريع التصاميم الحضرية للمناطق التقليدية في البحرين
المرحلة الأولى: الاستراتيجيات والسياسات

دليل ترميز التصميم الحضري والعمارة

**Capacity-Building for Enhancement
Of Urban Governance**

Urban Design Projects
for Traditional Areas in Bahrain
Stage One: Strategies & Policies

Manual of Urban Design and Architectural

February 2006

Manual of Urban Design and Architecture

Introduction

Background:

Two protection perimeters for the traditional areas of Manama and Muharraq have been proposed as the basis for establishing the conservation zones. An analysis of the quality of the urban environment has been carried out, and proposals have been developed to address the problems identified within these areas. In addition, an analysis in the form of a detailed survey of the buildings was conducted which revealed the physical state of the existing buildings, as well locations of vacant lots suitable for new buildings.

In order to assure the physical regeneration of these areas, specific proposals have been developed to address the problems identified within these areas and to direct new construction so as to harmonize seamlessly with the existing. These proposals take the form of Urban Design and Architectural Guidelines, Rules and Codes.

Implementation:

Urban Design and Architectural Guidelines, Rules and Codes are tools for directing the careful regeneration of sensitive areas. They range from guidelines (a set of official design principles which direct the architect/planner, yet allow freedom for creativity), to rules (a set of prescribed guidelines that must be followed without deviation), and to codes (the collection of guidelines and rules supplemented by laws and regulations that may apply) for whole towns and districts down to individual streets and buildings.

These guidelines, rules and codes were developed to address a range of issues, problems, and conditions. Each includes background information explaining the nature of the problem and procedures for its successful resolution and is supported by photos and sketches where necessary for clarification.

These codes have been identified as the minimum necessary to be implemented in the traditional areas of Manama and Muharraq. It may become necessary at some time in the future to revise, amend, or eliminate individual codes, as well as to add additional codes. Each guideline also includes background information explaining the generic nature of the problem and general procedures for its successful resolution. However, it is noted that each building may have its own unique set of circumstances that may require further investigation. Other codes such as occupancy rates are civil codes and must be addressed by the appropriate authorities. It is recommended for the proposed codes to be reviewed and if necessary modified before they are officially adopted.

Other codes such as occupancy rates are civil codes and must be addressed by the appropriate authorities. It is recommended for the proposed codes to be reviewed and if necessary modified before they are officially adopted.

دليل ترميز التصميم الحضري والعمارة مقدمة

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Manual of Urban Design and Architecture,

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دليل ترميز التصميم الحضري والعمارة

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Manual of Urban Design and Architecture

1. Neighborhoods: Boundary of Original *Feraj*

Background:

The heritage areas of both Muharraq and Manama evolved according to a system based on social, tribal, and familial bonds. The ruler initially would allocate land (*Iqta'*) to various groups and they would establish the location of their local mosque and tribal meeting place near it. This is followed by divisions of the surrounding land into plots of various sizes to each extended family. They would decide on the size in cooperation with the Imam. They would develop the land incrementally according to the principle of always responding to adjacent facts on the ground and to buildings that were built earlier. Alternative One, the institution of the *Mukhtar*, proposed by this consultant for the Management system is based on the principle that the population of each *Ferij* would select a person to be their representative who is called *Mukhtar*, i.e. "the selected one". Should Alternative One is selected for implementation then it is necessary to establish boundaries for each *Ferij*. Two studies of boundaries of the original *Feraj* in Muharraq were consulted and compared and it was found that they do not match (see Figures 2a, 2b, and 2c in next maps).

Implementation:

Based on historical data determine the location of all nuclei of *Feraj* that initially comprised the mosque and the tribal council facility. This information might be available for most areas of both heritage areas of Muharraq and Manama. They typical interface and adjacency of these two facilities to nearby houses should provide the pattern.

Based on recent and current data, determine the location of current mosques, *Ma'tams*, and other public facilities near a mosque and/or *Ma'tam* and use those as a basis for the *Ferij* nuclei. The boundaries of each *Ferij* can then be delineated taking into consideration the street pattern, parking locations- actual and potential and information on the approximate number of people in each *Ferij*.

دليل ترميز التصميم الحضري والعمارة

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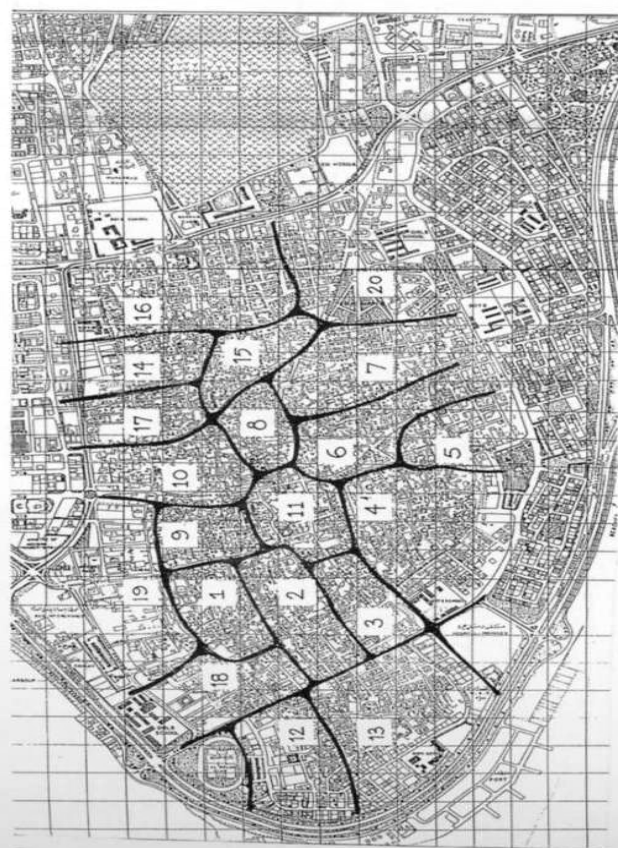
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KEY

ORIGINAL CORE

1. Al Jalahmah
2. Al Qasasib
3. Al Mu'awdah & Al Bana'in
4. Al Bin Ali as Saghah
5. Al Bukhamis
6. Al bin Shiddah & Al Mahmid
7. Al Hayayik
8. Al Kharu
9. Al bin Khatir
10. Al Shaikh Abdulla
11. Al Shaikh Hamad

HALAT ABU MAHER

12. Al Jalahmah
13. Al Bukuwara

EXTENSION AREAS

14. Bin Hindi
15. Al Mirri
16. Al Amamrah
17. Al Ghamrah
18. Al Zayayinah

OTHER

19. Suq
20. Steeshan & Kazinu

مناطق القبائل

TRIBAL AREAS (APPROXIMATION)

From a study of Al-Muharraq by Gulf House Engineering, March 2004.

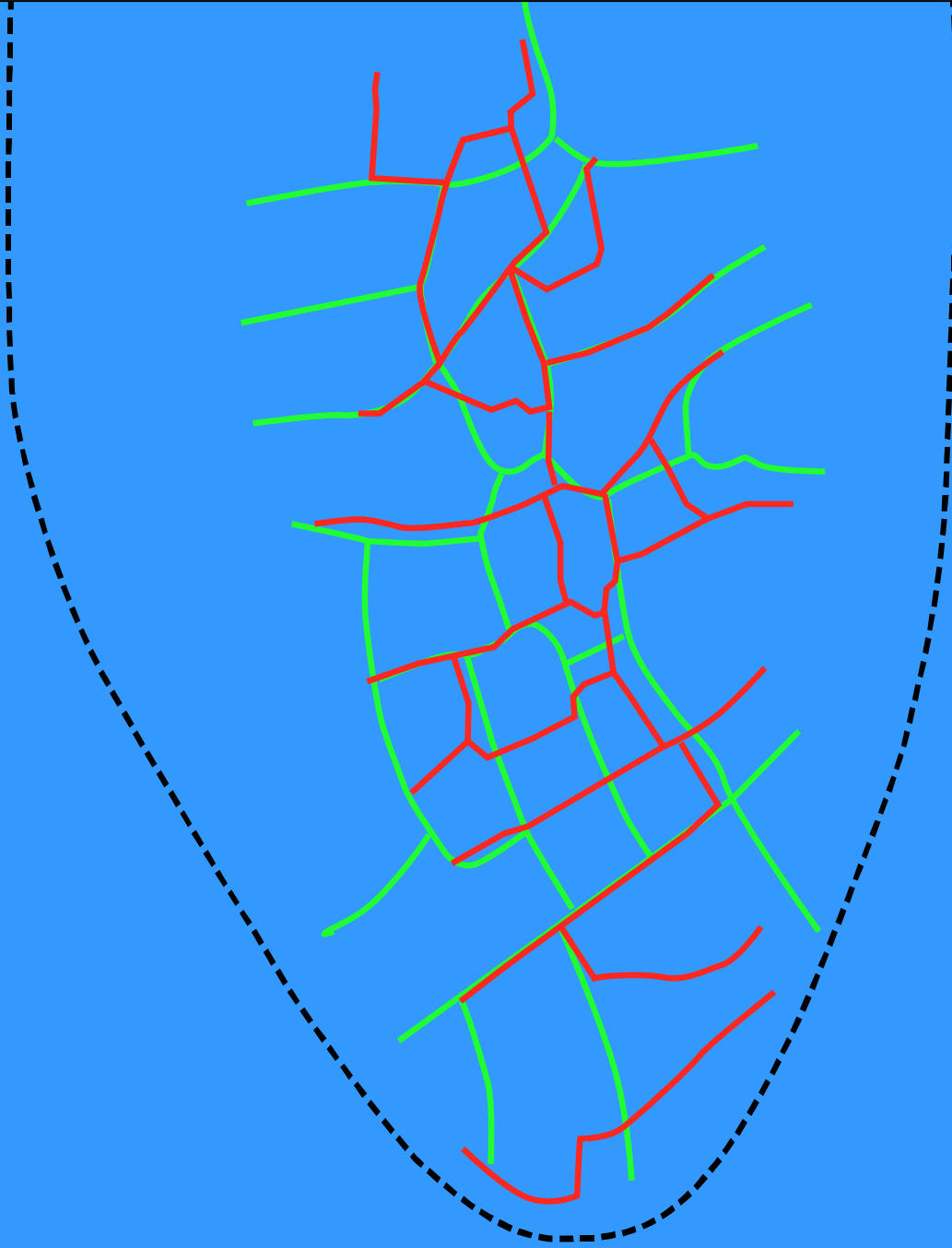


فرجان المدينة القديمة/ المحرق

فرجان المدينة القديمة

- 1- حالة بو ماهر
- 2- المهجع
- 3- المعاودة
- 4- الزبائنه
- 5- السوق
- 6- البنائين
- 7- البنعلي
- 8- القصاصيب
- 9- الجلامه
- 10- آل بن خاطر
- 11- الشيخ حمد
- 12- أبو حميس
- 13- آل بن شدة والمحمد
- 14- الشيخ عبدالله
- 15- الخشارو
- 16- الحياييك
- 17- سنين
- 18- المسري
- 19- بن هاشمي
- 20- العمارة

THE FERAJ OF AL-MUHARRAQ FROM TWO STUDIES
تداخل حدود الفريج في المحرق هي تتطابق في الدراستين في الصفحة الماضية



OVERLAP OF THE BOUNDRIES OF THE FERAJ IN AL-MUHARRRAQ AS
THEY ARE DEPICTED IN THE TWO STUDIES SHOWN ON THE PREVIOUS
الفريج في المحرق من الدراسات المذكورة

Manual of Urban Design and Architecture

2. Neighborhoods: Temporary Screening of Demolished Building Sites and Parking Lots

Background:

Currently, after demolition, many sites are left vacant for long periods of time before new construction commences. These sites tend to gather rubbish, abandoned vehicles, or are used as ad-hoc car parks. This condition not only destroys the urban fabric, but degrades the overall visual quality of the area.

Implementation:

1-For sites where permission for demolition has been granted, the provisions of this guideline will not take effect if actual construction of a building begins within one month of demolition.

2-For sites that are currently vacant, or where new construction has not commenced within the time period as described above, until such time as new buildings are constructed on the site, walls or screens, 3 meters in height, are to be constructed along the street edges of the property to mask the property from view.



3-Walls are to be of block work or pre-cast concrete panels with the joints filled. In either case, the entire length of the wall facing towards the street must be covered with render painted in a color to match its surroundings. In order to reduce costs, the interior face need not be covered.

4- If screens are to be constructed, they may have to be of non-flammable or fire-retardant materials. The local authorities should be consulted as to any safety regulations. Preferably, they should be constructed of treated timber, painted brown.

دليل ترميز التصميم الحضري والعمارة

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5-Screens are to have traditional louver or lattice work pattern. The screens are to be mounted on appropriately sized timber posts which are fixed to an appropriate foundation or anchor as necessary.

6-An opening for vehicle access may not be wider than 3 meters, maximum two such openings per site. Where possible, a minimum of 3 meters between these openings should be maintained.

7-Gates may be installed at the openings, and be constructed of timber or metal, may be solid or open, and should be of a traditional door pattern, painted brown.

8-Where possible, provision should be made to allow vines to grow up the wall or screen to enhance the visual appearance and avoid graffiti.

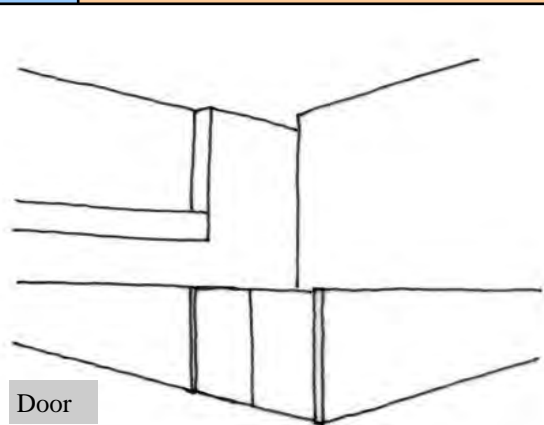
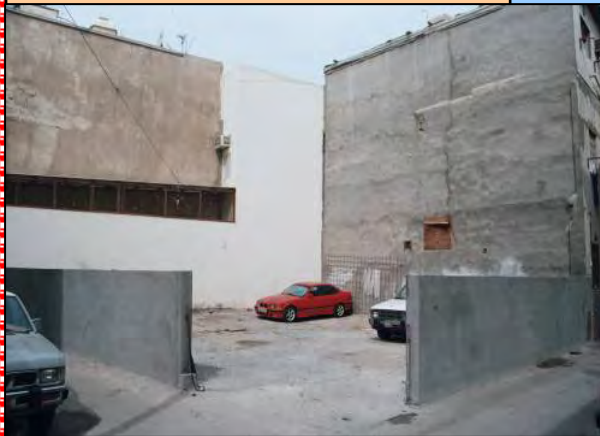
9-The provisions here in no way prevent the use of the property as a temporary parking lot or some other revenue generating use deemed appropriate by the local authorities.

EXISTING CONDITIONS

الوضع الحالي

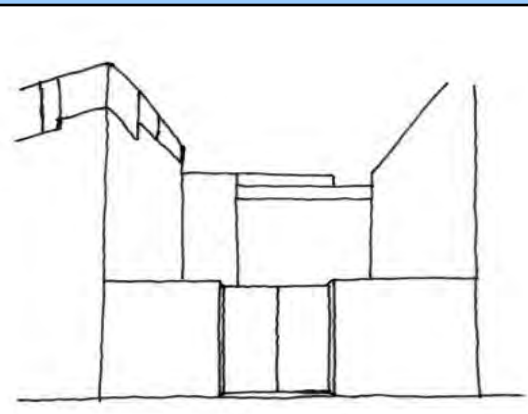
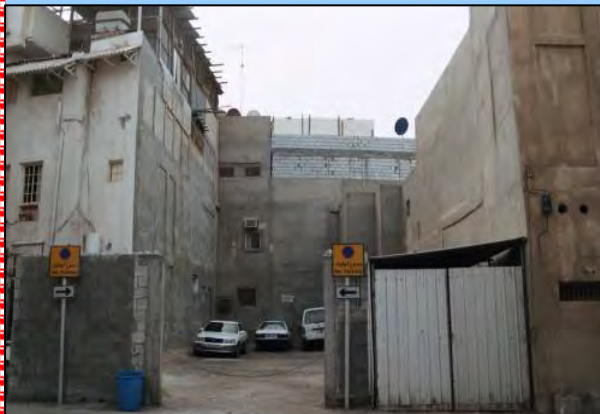
PROPOSED SOLUTIONS

الحلول المقترحة



BOUNDARY WALLS WITH SWINGING GATE

جدران محددة للقطعة الفارغة مع باب



BOUNDARY WALLS WITH SWINGING

جدران محددة للقطعة الفارغة مع باب

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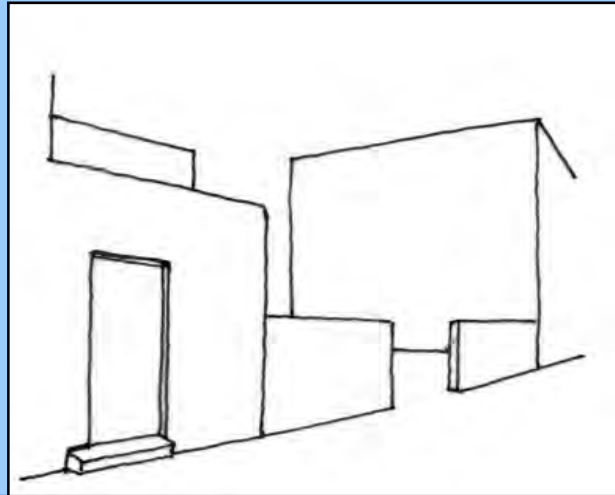
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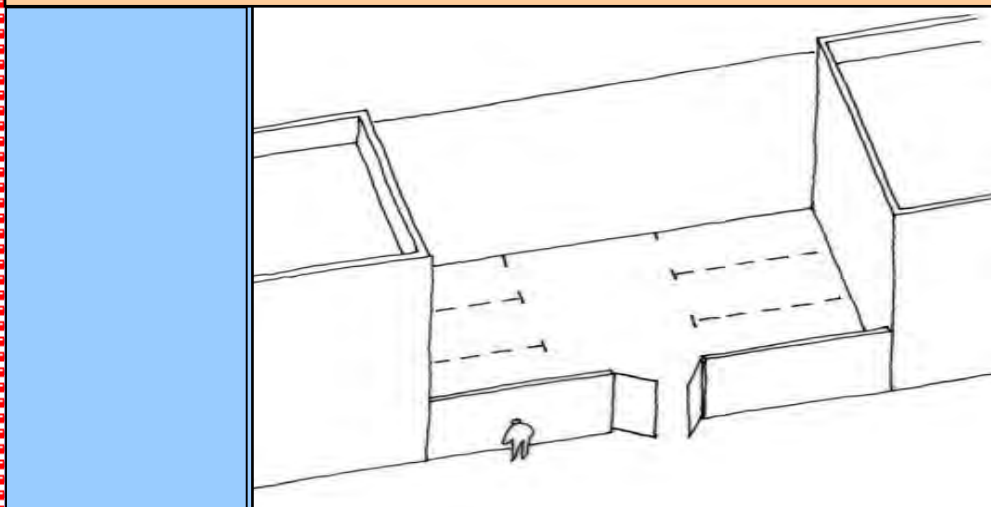
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BOUNDARY WALLS WITH SWINGING GATE

جدران محددة للقطعة الفارغة مع باب



فتحة الباب مالا تقل عن ثلاثة مترات

OPENING MAX. 3m. WIDE

Manual of Urban Design, Architecture

3. Streets: Boundary of Original *Feraj*

Background:

The *Fina* is an Arabic term that refers to two types of spaces. The internal courtyard of a building is named *Fina* in some parts of the Arab world. It also is synonymous with the term *Harim* which refers to an invisible space about 1:00 to 1:50 meters wide alongside all exterior walls of a building that is not attached to other walls, and primarily alongside streets and access paths. It extends vertically alongside the walls of the building.

The owner or tenant of the building has certain rights and responsibilities associated with the *Fina*. He has the right to use it for temporary purposes provided such use will not impede the traffic in the street, and he has the responsibility to keep his part of the *Fina* always clean and safe from any obstructions. The *Fina* extended vertically allows high-level projections in the form of balconies, enclosed bay windows, and rooms bridging the public-right-of-way which are called *Sabat*.

Implementation:

In the past, before the era of municipal government, the historic sectors of Muharraq and Manama fully utilized the *Fina* as in other Arab-Islamic cities. Therefore:

- 1- The *Fina* should be recognized as a generative principle.
- 2- As it is evident in the attached photo from a street in Muharraq, projections at the upper level were allowed as well as steps to front doors within the space of the *Fina*. This practice should be encouraged to continue so that the traditional character of the built form within streets will continue.
- 3- Although the municipal system took over the responsibility of cleaning streets, it never manages to keep them always clean. Therefore, owners or tenants of buildings are responsible to:
 - (i) clean the *Fina* adjacent to the exterior walls of their building at least once/week.
 - (ii) Placing any kind of item within the *Fina* that will impede access in the street is not allowed, except for dire necessity and only for a few hours.
 - (iii) If the public-right-of-way is determined to be wide enough for vehicular access (depending on the location in the town) and particularly if wide enough for emergency vehicular access, then it is allowed to use the *Fina* for planting vines and flowers, and to locate a *Sabil*- which is a privately donated and maintained drinking fountain for public use.
 - (iv) Any projections from the upper floor (s) of a building are allowed provided its base is at least 4.60 meters higher than the street level. The height may be lower if that part of the street is determined not to allow emergency vehicles to go through.

دليل ترميز التصميم الحضري والعمارة

3. الشوارع : الحدود الأصلية للفريق (الأحياء)

الخلفية:

إن كلمة فناء هي كلمة عربية الأصل وهي مصطلح نعني به نوعين من المساحات أو الأراضي الفضاء ناحية نعني به الفناء الداخلي للبنية أو المنزل وذلك في الكثير من بلدان العالم العربي فمن ومن ناحية أخرى فإنه مصطلح مترادفات أو متساويات من الكلمات لكلمة حريم أو حرم ملك كما كان ويسمونه من قبل ونعني بها فضاء أو مكان متسع معزل محجوب وغير منظور تتراوح مساحته بين المتر والمتر ونصف أتساعا أما الطول فيمتد ليشمل الطول الخارجي للمبنى بما فيه الجدران الخارجية للمبنى والغير متصلة بالمبنى بل التي تحيط به وتكون هذه المساحة بطول الشوارع بما فيها الممرات والطرق وتمتد هذه المساحة أيضا وبشكل رأسي إلى منتهى أو ارتفاع جدران البناء .

ومما هو جدير بالذكر أن صاحب البناية له من الحقوق والواجبات والمسؤوليات الكثيرة تجاه هذا الفناء فمن ضمن حقوقه الضرورية تلك حيث أنه يستخدم وبصفة مؤقتة أن يكون هذا الاستخدام وبحيث لا تعوق الحركة المرورية بالشارع ومن مسؤولياته أيضا أن يجعل جزءا من الفناء وبصفة دائمة نظيف وأمن للغاية وبدون أية عوائق . وإلى حيث يمتد الفناء رأسيًا بحيث يسمح ببروزات تمتد إلى ارتفاعات على هيئة بلكونات أو شرفات لها نوافذ كستنائية اللون وامتدادات خارجية بحيث لا تعوق أو تجور على حقوق العامة من الناس والذي يسمى (السبات) أو البروزات .

التنفيذ :

في الماضي وقبل هذا العصر كانت حكومة البلديات والقطاعات التاريخية والأثرية في المحرق والمنامة تنتفع بالكامل بالفناء كما كان متبع من قبل بالمدن الإسلامية العربية , ولذلك فإنه :

- 1- ينبغي أن يتم التعارف على أن هذا الفناء يعتبر بمثابة فناء عام .
- 2- مما هو واضح في الصورة التي ممكن أن تؤخذ من أحد الشوارع الموجودة في المحرق فإن تلك البروزات في الارتفاعات العالية كان مسموح بها أيضا من أمام الأبواب وبداخل منطقة الفناء وبهذا الوضع ومن الناحية العملية فإنه قد تم تشجيع الشخصيات العادية وبصفة مستمرة إلى البناء والتشييد للبنىات بداخل تلك الشوارع وبشكل مستمر ومنظم .
- 3- بالرغم من أن النظام البلدي سيطرَ على المسؤولية لتنظيف الشوارع ، إلا أنه قد بدا أن لا يستطيع إبقاء هذه الأماكن بحالة نظيفة دائما . لذا ، فإنه يجب على مالكي أو مستأجري تلك البنىات وتعتبر من مسؤولياتهم الكاملة الاهتمام والعناية التامة بالآتي :

 - نظافة الفناء المجاور للجدران الخارجية للمبنى بحد أدنى مرة واحدة أسبوعيا .
 - عدم الجواز أو السماح لأية إعاقات بداخل الفناء فيما عدا وعند الضرورة القصوى والملحة فقط وذلك لمدة تتراوح بين ساعات قلائل على الأكثر .
 - في حالة الأخذ في الاعتبار أحقية الطريق وحقوق العامة من الناس وكيف يكون محدد وبقدر كاف لدخول وخروج وحركة السيارات وبالطبع يعتمد هذا على الموقع لهذه المنطقة من المدينة نفسها وبصفة خاصة لدخول وخروج سيارات الطوارئ كذلك الخاصة بالإسعاف والمطافئ ومن ثم يسمح باستخدام الفناء لزراعة نبات معترش (من نوع معين) وورود وأزهار ولوضعها كم منطقة خاصة بالصيانة والنافورة المستخدمة لعامة الناس .
 - أية بروزات من الأسقف الخاصة بالبنية تَسمحُ لمجهّزة قاعدتها على الأقل 4.60 متر أعلى من مستوى الشارع .
 - قد يكون الارتفاع أقل من الارتفاع اللازم لدخول وخروج سيارات الطوارئ مما يعيقها وبالتالي لا يسمح لها بسهولة وهذا لا يجوز وممنوع .

The width of the projection must not exceed the width of the ***Fina***, keeping in consideration the nature of use of the ***Fina*** on the other side of the street. One set of steps to the front door are allowed for each building.

The treatment of downspouts and gargoyles for rainwater evacuation onto streets should observe the following rules:

1-Downspouts are preferred to gargoyles, because they do not cause splashing.

2- When gargoyles are used they should project from the roof of a one-story structure and pour within the width of the ***Fina*** of the building from which it originates. It is preferable to build the spout at a 45 degree angle from the surface of the wall so that rainwater will fall within the ***Fina*** and thus avoid splashing the wall of the opposite neighbor, particularly in narrow streets.

3-Gargoyles are not allowed from structures of more than one story.



A STREET IN MANAMA, 2006, THAT SHOWS THE CONTINUOUS USE OF THE FINA, SHOWING STEPS AND PLANTS WITHIN IT.

ويجب ألا يزيد عرض البروزات تلك عن عرض الفناء نفسه على أن يَظَلُّ في اعتبارنا من جهة أخرى أن طبيعة استعمال الفناء ليس فقط من أجل المالك أو السكان بل على الجانب الآخر لمحافظة على الشارع . وهناك مجموعة من العتبات أو الدرج لابد أن يُسَمَّحُ ببنائها أمام الباب الأمامي لكل بناية .

• لابد من وجود مصارف لتصريف مياه الأمطار في الشوارع بحيث تكون هذه المصارف في الشوارع مع ملاحظة القواعد التالية :

1- تفضل أن تكون هذه المصارف على هيئة بالوعات كتلك الممتدة في البنايات وذلك تجنباً للرداذ أو التناثر. قد تستخدم هذه المصارف على هيئة بروز من سطح البناية في شكل ماسورة طويلة تصب بمحتوياتها في داخل فناء المبنى الذي ينبثق منه هذا المصرف أصلاً .

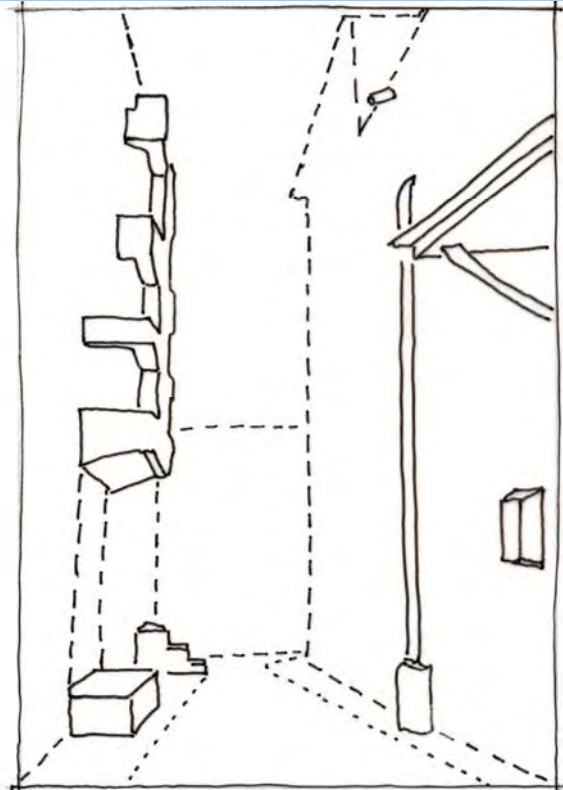
2- يجب أن تبنى هذه المصارف بزاوية ميل على الجدار أو الحائط قدرها 45 درجة وذلك لتجنب نزول مياه الأمطار على الجدار بل يصب بمحتوياته في الفناء وكذلك لتجنب الرداذ بقدر الإمكان على جدران للبنايات المجاورة وبصفة خاصة تلك البنايات في الشوارع الضيقة.

3- ويجب أن نأخذ في الاعتبار أن هذه المصارف لا تخرج من التراكيب والديكورات ويجب ألا يتعدى عدد تلك المصارف عن واحدة في كل طابق.



PHOTO OF A STREET IN MUHARRAQ,
JUNE 2005

صورة لأحد شوارع المحرق



SOLID LINES SHOW ELEMENTS
ALLOWED WITHIN THE FINJA
الخطوط الصلدة تظهر العناصر المسموحة خلال الفناء

4. Parking: Medium-Large Capacity, Permanent Parking Structures

Background:

Currently, many sites of demolished buildings are left vacant, accumulate rubbish, and often used as ad-hoc parking lots. This condition not only destroys the urban fabric, but degrades the overall visual quality of the area. For a variety of reasons, these sites may not generate enough income for the owners to cover the construction and maintenance of new buildings. In many cases, the owners earn more income through renting parking spaces on the site to nearby residents.

Implementation:

1. Where deemed appropriate by the conservation plan, larger capacity car parks should be constructed. These sites may be in private or public ownership.
2. The number of storeys is to be judged on a case by case basis, taking into account the heights of neighboring buildings, visual sight lines, and the amount of traffic the adjacent streets can adequately support.
3. If the site is large enough, a basement parking level must be provided.
4. If it has been determined that only one above-ground storey may be constructed, this storey can be enclosed with walls and roofed over, or alternatively, be constructed without a roof but enclosed by walls or screens 3 meters in height, to be constructed along the street edges of the property. In this case, sun shading devices may be erected for the vehicles, preferably of light weight materials and canvas, the design to be appropriate to the site, the maximum height not to exceed 3 meters at any point.



دليل ترميز التصميم الحضري والعمارة

4. مواقف السيارات :السعة المتوسطة والكبرى وكذلك المواقف الدائمة

الخلفية:

إن الكثير من المواقع التي دكت وهدمت بالفعل لا بد وأن تترك مكاناً شاغراً وفضاء وبالتالي تكون موقع لتجمع القمامة وكذلك لتخزين الكثير من الخردة المتنوعة أيضاً. ولا يعتبر هذا الشرط سبباً يُحطَّم النسيج والصيغة الحضرية فحسب ، بل أيضاً يؤدي إلى ما نسميه بالتلوث البصري وبالتالي إلى الشكل العام للمكان . ولمختلف وتعدد الأسباب ، فإن هذه المواقع قد لا تؤلّد ولا تدر دخلاً كافياً للمالكين لتغطية البناء وصيانة البنايات الجديدة في العديد من الحالات، يَكسبُ المالكين دخلاً أكثرَ من خلال تأجير أماكن الوقوف على الموقع إلى مكان قريب من سگان البنايات القريبة من ذلك المكان .

التنفيذ:

- 1.ومما هو معتقد ومناسب في مثل تلك الحالات فإنه يجب عمل خريطة للصيانة والوصول إلى أكبر سعة لمواقف السيارات التي يجب تشييدها في تلك الأماكن علماً بأن هذه المواقع هي في حد ذاتها ملكية عامة .
- 2.ويجب لنا أن نعلم بأن عدد الطوابق لتلك المواقف في كل حالة مرتبط بقاعدة الحالة ، ولا بد أن يؤخذ في الحسبان ارتفاعات البنايات المُجاوِرة، والمنظر البصري العام ، وكمية المرور وكذلك الشوارع المجاورة يُمكن أن تُدعم تلك المواقف وبشكل كافي.
3. إذا كان الموقع كبيراً بما فيه الكفاية , فإنه يجب أن يزود بسرداب الذي يُعتبر مستوى آخر في مواقف السيارات وبالتالي يؤدي إلى زيادة السعة الإجمالية للسيارات .
4. إن هناك بعض الحالات التي فيها هذه المواقف للسيارات عبارة عن طابق واحد فقط يمكن أن يبنى وأنه قد يُبنى ، هذا الطابق ويُمكن أن يُرفَقَ بالحيطان وسقَفَ وانتهى الأمر عندئذ ، أو على النقيض تماماً فقد يترك هذا الطابق عارياً تماماً من أية أسقف أو حتى حوائط أو أية حواجز لارتفاع قد يصل إلى ثلاثة أمتاراً، لكي يُبنى على طول حافات شارع الملكية.



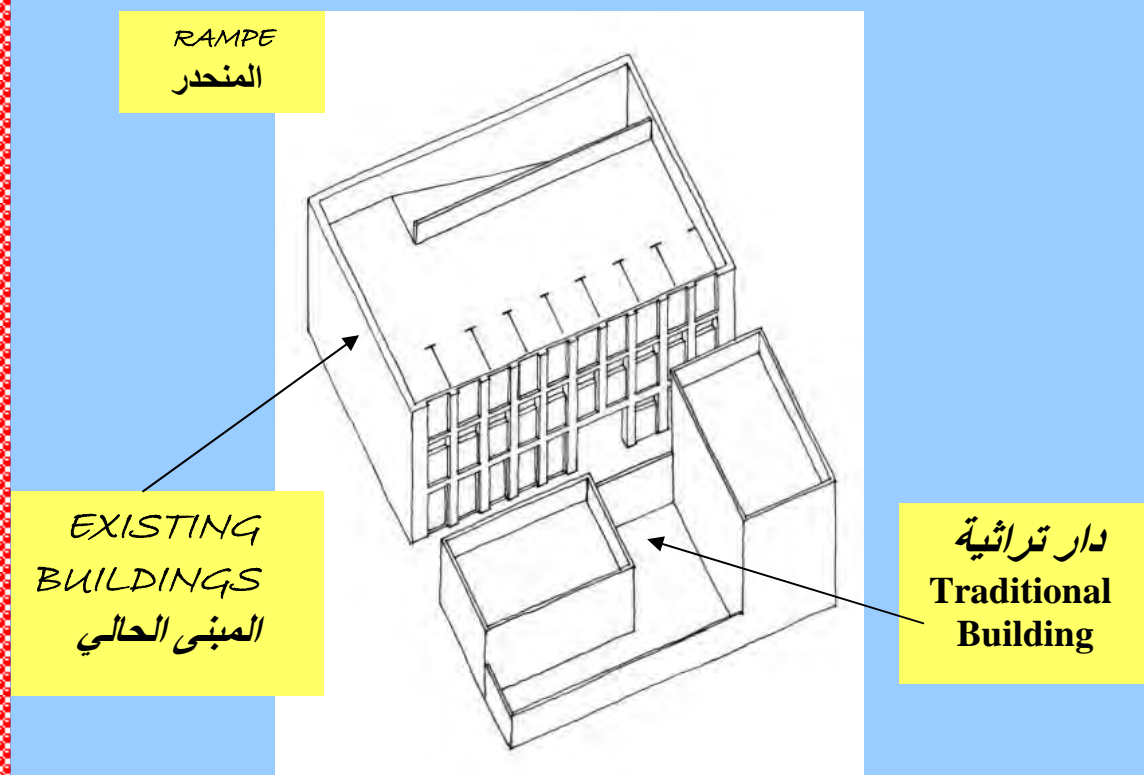
5..If it has been determined that more than one above ground storey may be constructed, then the ground floor only may alternatively be used for another commercial purpose such as a supermarket if deemed suitable for the area and the specific site.

6.Ventilation openings must meet the requirements of the local building codes. These openings, if located in the side walls, should take the form of open screens that are designed according to a traditional pattern. If the structure is of more than one above-ground storey, these openings should be located above eye level if possible to preserve the privacy of the inhabitants of the neighboring buildings.

7.If parking is to be located on the roof level, this level must be provided with a parapet of at least 2 meters in height and contain no openings. Sun shades for the vehicles may be provided, but their height may not exceed 2 meters at any point.

8.The exterior finish of the structure must resemble render, with any joints filled.

9.The exterior color to be appropriate to its neighboring buildings.



5. في هذه الحالة ، فإن أجهزة تظليل أو حجب الشمس (الشماسي والتند) قَدْ تُنصَّب للسيارات ، ومن المفضل أن تصنع هذه التند والشماسي من المواد ذات الوزن الخفيف أو من الأقمشة الخاصة بصناعة الخيم ، ومن المهم أيضا أن تناسب التصميم لتلك التند والشماسي ملائم مع الموقع ، وأن يكون الارتفاع الأقصى لا يتجاوزَ 3 أمتار بأي نقطة.

6. يجب أن تكون هذه المواقف للسيارات مكونة من أكثر من طابق واحد ففي هذه الحالة فإنه يتم بناء أكثر من طابق فوق الطابق الأرضي بحيث أن يكون الطابق الأرضي في هذه الحالة للاستخدام في أغراض تجارية مثل عمل سوق تجارى بما يناسب واحتياجات هذه المنطقة التي يتواجد بها هذا الموقف وتلك المنطقة.

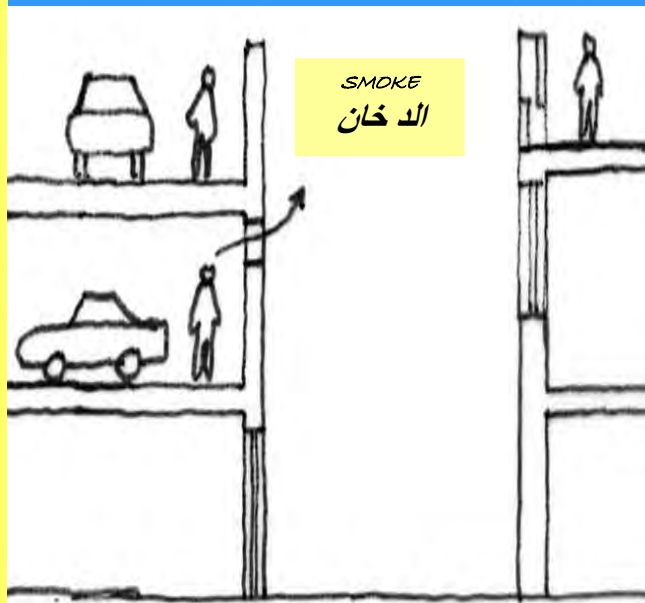
7. ومن ناحية أخرى فإن فتحات التهوية لابد وأن نأخذها في الحسبان بحيث تتناسب مع احتياجات إعادة البناء لتلك البنايات التي حولها بالكامل . بالإضافة إلى ذلك فإن هذه الفتحات إذا وقعت في الجدران الجانبية فلا بد وأن تأخذ شكل الحواجز المفتوحة والتي تصمم بطريقة النماذج التقليدية والمعهودة في مثل هذه المواقف . إذ أن التراكيب التي تتكون منها هذه الطوابق لابد وأن تكون بها من الفتحات ما ينبغي وأن يكون على مستوى مرتفع عن مستوى مرمى البصر وذلك من أجل الاحتفاظ بالخصوصية والسرية لسكان البنايات المجاورة .

8. في الحالات التي سيتم فيها استخدام الطابق العلوي (السطح) كموقف للسيارات أيضا فإنه وفي هذه الحالة فينبغي أن يكون هذا المستوى من الموقف مجهز بحواجز أو متراس من ارتفاع يصل بشكل أدنى إلى ارتفاع لا يقل عن مترين ولا يحتوى على أية فتحات . في هذه الحالة ، فإن أجهزة تظليل أو حجب الشمس (الشماسي والتند) قَدْ تُنصَّب للسيارات ، ومن المهم ، أن أن يكون الارتفاع الأقصى والمسموح به لا يتجاوزَ متران بأي نقطة.

9. هذا ويتم الصقل أو اللمسات النهائية للمكان أن تكون معبرة ومتناسقة ومكملة وملائمة مع المنظر العام للمكان مع ملئ الفواصل بينها ولا بد أن نأخذ في الاعتبار أن الألوان الخارجية للمكان لابد وأن تتناسب مع ألوان البنايات المجاورة.

NEW
PARKING
STRUCTURE

هيكل موقف
الجديد



SMOKE AND
EXHAUST VENT
OPENINGS
PLACED AT
HIGH LEVEL TO
AVOID VIEWS
FROM PARKING
LEVEL DOWN
ON TO
NEIGHBOR
الدخان ومفرغة
الهواء مفتوحة من
الأعلى لمنع النظر
إلى الجيران

5. Parking: Parking Distances to Front Door

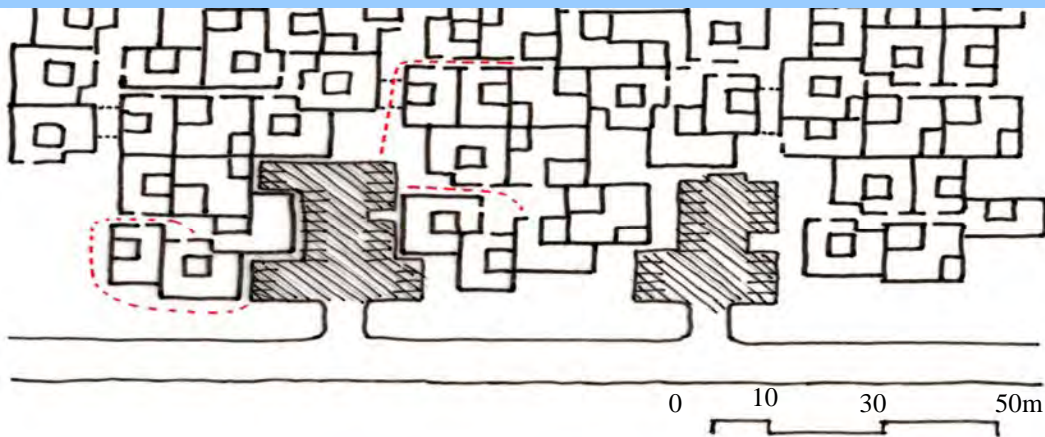
Background:

To allow parking next to every house would destroy the sense of place of the traditional areas of Muharraq and Manama. Separation from a parking spot and the destination of a car's owner or passenger is essential. Standards such as 50 meters can be explored. In some locations it can be longer, in others slightly shorter. Rules for parking areas, such as their size in terms of how many cars can be grouped together, landscaping features, and design solutions have to be developed to provide shade and comfort for walking to one's destination from parking.

Innovative approaches for financing, implementing and maintaining these suggestions have to be developed. Examples: Wind towers for cooling streets, amplified by electrical fans that would help in air circulation in streets. Plants such as vines planted within the *Fina* of houses and kept up by the owners. These vines and plants would provide shade and delight in streets.

Implementation:

1. A standard of an average of fifty (50) meters is a distance to walk from a parking spot to the front door of the owner's or tenant's house. This distance may be slightly longer or shorter depending on the configurations of building clusters and nearby street pattern.
2. A ratio of 1:1 parking space to every house should be attempted in distributing parking location within the heritage areas. Additional parking space for visitors should be provided for near to or adjacent to the *Ferij's* nuclei.



A SKETCH OF A PARTIAL PLAN OF A PROTOTYPE CLUSTER DEVELOPED BY CONSULTANT, SHOWING HOW CLUSTERS OF PARKING CAN BE INTEGRATED WITH HOUSES BASED ON THE PRINCIPLE OF SEPARATION OF AN AVERAGE 50 METERS FROM PARKING TO FRONT DOOR. (Dotted line indicates linkages from parking to houses).

مرتسم لجزء من مخطط لعنقود سكني تراثي تم تطويره يوضح كيف يمكن للمنطقة السكنية ان تستوعب مواقف السيارات وبشكل متكامل ومعتمدة بالأساس على الفصل بين السابلة والمواقف وبمعدل 50 متر مسافة الى الباب الرئيسي للمسكن .

دليل ترميز التصميم الحضري والعمارة

5. مواقف السيارات :أماكن وقوف السيارات أمام الأبواب

الخلفية:

فى حالة السماح بالوقوف أمام الأبواب الأمامية للبنىات وأمام كل بناية على حدة فإن ذلك سوف يؤدى إلى تدمير والقضاء على المنظر العام للمكان وخاصة الأماكن التقليدية بالنمالة والمحرق ومن المعروف أن مكان مواقف السيارات هام جدا بالنسبة لمالكها وقرب ذلك المكان من منزله أو المكان الذي سيقضى منه حاجته. ومن المعروف أن هذه المساحات لا تقل عن خمسين مترا كمساحة قياسية. غير أنها في بعض المواقع يمكن أن تكون أطول، وفي الأخرى تكون أقصر قليلاً. هناك قواعد لتلك المناطق المستخدمة كمواقف للسيارات ، مثلاً سعتها بالنسبة لعدد السيارات التي يمكن أن تتجمع فيها ، وكذلك ما يتناسب مع تصميم المواقع المحيطة والمنظر العام للمكان ، وكذلك التصميمات التي تتناسب مع التطورات الحادثة في تطوير تلك المظلات والشمسيات وذلك كله من أجل راحة المشاة والمارة وأيضاً من أجل هؤلاء الذين يرغبون في استخدام مواقف السيارات أو قضاء حاجاتهم . وأنه يجب أن يتم تطوير الاقتراحات الخاصة بالنظرات الإبداعية للتمويل، والتنفيذ والتطبيق.ومن تلك الأمثلة: أبراج لتبريد الشوارع والتي تعمل بالمرآح الكهربائية والتي تساعد في تجديد ودوران الهواء بصفة مستمرة في تلك الشوارع. ويجب الأخذ في الاعتبار زراعة بعض النباتات مثل نباتات الكرمات والتي قد زرع في الأفنية للبيوت وتتم رعايتها من قبل الملاك وهذه الكرمات والنباتات تزودان ظلًا وتضفي البهجة على الشوارع .

التنفيذ:

1- ومما هو جدير بالذكر أن متوسط المسافة بين المارة أو المشاة من موقع الباب أو مواقف السيارات إلى أبواب منازلهم هي حوالي خمسون متراً في المتوسط وبعداً عن منزل الساكن أو المالك. وقد تعتبر هذه المسافة بعيدة أو قصيرة إلى حد ما وتختلف من شخص لآخر تبعاً لموقع البناية من موقف السيارات.

2- ولا بد وأن تكون تلك المواقف موزعة بنسبة 1 : 1 موقف لكل منزل وتبذل كل المحاولات لتوزيع أماكن الوقوف تلك على الأماكن كنوع من الميراث بداخل تلك الأماكن السكنية بالإضافة أيضاً إلى تخصيص أماكن أخرى للسيارات لهؤلاء الزائرين بالمكان بحيث تكون قريبة لكل حي أو ممرضة في مركز الحي نفسه.

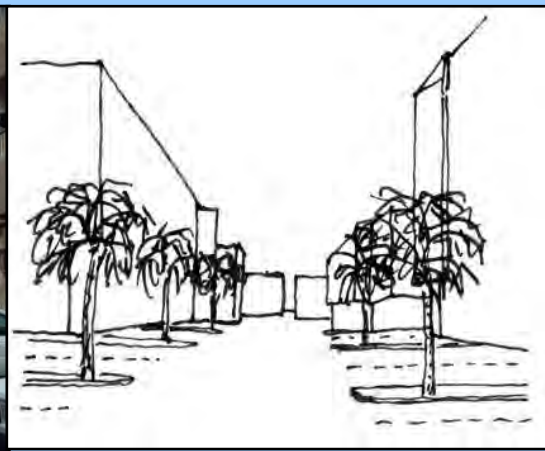
6. Parking: Small Capacity, Permanent Car Parks within the Public Right of Way

Background:

Currently, the design of parking spaces within the street is aesthetically unpleasant, often haphazard, and in many instances encroaches upon the pedestrian right of way including, where existing, the sidewalks. Often no alternative car parking **spaces** are available within a reasonable walking distance to residents' front doors. In many instances, the urban fabric is of irregular pattern, while the street is of a constant width. The irregular space between the two could be used for additional car parking spaces and/or combined with a public open space.

Implementation:

- 1- In many instances, the urban fabric is of irregular pattern, while the street is of a constant width. The irregular space between the two could be used for additional car parking spaces and/or combined with a public open space.
- 2.- Where deemed appropriate by the conservation plan, smaller capacity car parks should be constructed. These sites should use the specific geometry of their individual site in determining the number of parking spaces that can be reasonably provided.
- 3- Where possible, landscaping should be provided. This may take the form of a single tree or desert-scape plantings requiring little water or maintenance.
4. The responsible authorities should be consulted as to any technical requirements regarding the design of such car parking spaces within the public right-of-way.



دليل ترميز التصميم الحضري والعمارة

6. مواقف السيارات: السعة الصغرى وكذلك المواقف الدائمة والحفاظ على الحقوق العامة للمارة والمشاة والطريق

الخلفية:

إن التصميمات الحالية لتلك المواقف أو الباركات للسيارات لا تتوافق والناحية الجمالية للشوارع بل وأنها في حالات عشوائية وفي أغلب الأحيان يأتي الموقف للسيارات بالصدفة وليس بأي نوع من الترتيبات ، وفي حالات كثيرة يتجاوز على حق المرور العادي أو المشاة ويشمل ذلك أيضا وفي أغلب الأحيان شغل الأرصفة نفسها. وفي أغلب الأحيان لا توجد أماكن بديلة متوفرة لموقف السيارات على بعد مسافة قليلة ومعقولة إلى منازل السكان بتلك المناطق. وفي حالات كثيرة ، فإن النسيج والصبغة الحضرية تعتبر من النمط الشاذ في تلك الأماكن ، حيث الشارع ثابت في عرضه بينما يكتظ بالسيارات وفي بعض الحالات فإن الفضاء بين الشوارع يُمكن أن يُستعمل لأماكن وقوف السيارات الإضافية وقد يندمج مع فضاء مفتوح وعام .

التنفيذ:

- 1- ومما هو جدير بالذكر أنه في حالات كثيرة ، نجد أن النسيج أو الصبغة الحضرية تعتبر من النمط الشاذ ، بينما الشارع له عرض ثابت لا يتغير. كما أن ذلك الفضاء الشاذ الذي يقع بين الشوارع يُمكن أن يُستعمل كأماكن لموقف السيارات الإضافية وقد يندمج مع فضاء مفتوح عام .
- 2- يعتبر موقف عام للسيارات حيث تُعتبر هذه الأماكن ملائمة لخطة الحماية ، وللسعة الصغرى لمواقف السيارات والتي ينبغي إقامتها وتشبيدها . ومن ثم فإن هذه المواقف يجب أن تُستعمل الهندسة المعينة والفردية لكل موقع على حدة لتقرير عدد أماكن الوقوف الذي يُمكن أن يتم زيادتها ولكن بحدّ معقول.
- 3- وفي نفس الوقت الاهتمام بمظلات السيارات والتي قد تكون تلك المظلات على هيئة شجرة وحيدة كحد أدنى للتظليل على السيارات أو نباتات صحراوية من تلك التي تتحمل الشمس والعطش وبالتالي لا تحتاج إلى كميات كبيرة من المياه أو الصيانة.
- 4- ومن ناحية أخرى فإنه يجب على الجهات المعنية أن تباشر استشاراتها ومتابعتها على المتطلبات الفنية والخاصة بالتصميمات التي تخص تلك المواقف للسيارات مع الأخذ في الاعتبار الأحقية للطريق العام والمشاة أو المارة.



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7. Utilities and Public Services: Utilities:

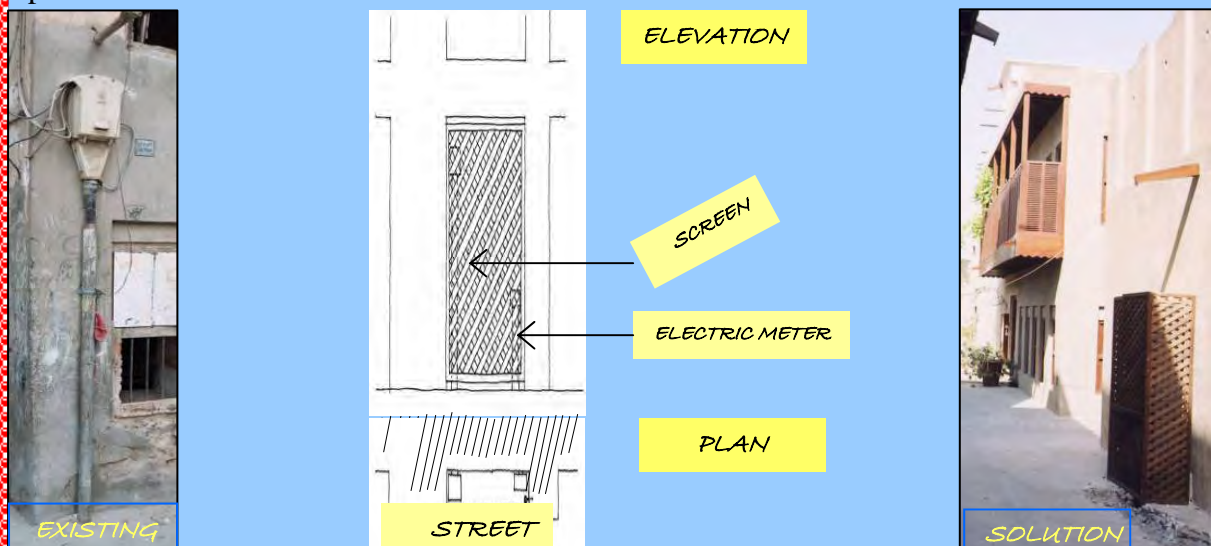
Electric Meters and Connections to the Mains in the Street

Background:

Currently, electrical mains and meters are located within the buildings for reasons of safety. In apartment and office buildings, easy access for reading the meters is provided through the common areas. However, in the case of private, traditional houses, it is necessary to enter the house, impinging on the private realm. Also, it is necessary that a member of the family be at home to allow access.

Implementation:

- 1- The placement of utilities on the façade of the building should be done in such a way to be as unobtrusive as possible. When more than one wire enters the building at the same location, these wires should be bundled together, preferably enclosed in a rigid conduit, the conduit to be the same color as the façade.
- 2- No wires of any type once they enter the building are to be permitted to re-emerge onto the façade; this includes electrics, cables for television, etc.
- 3- Provision for a meter that can be read from the street should be encouraged in the case of private houses. This meter is to be recessed within the wall at a suitable location that does not impinge upon the appearance of the façade, and be covered by a wooden screen of a traditional pattern, either louvered or open latticework, painted traditional brown. The screen can be either a lift-out or swinging for access.
- 4- Size of the recess and type of meter must be checked with the local utility company as to compliance with their technical requirements. There are meter types which are split, the actual connections are within the building, but the meter display is located elsewhere.
- 5- Depending upon the building, it may be necessary to mount the meter to the side of the pier within the recess. Often the walls of the recess are thin stone panels and will be damaged if the meter is affixed to them.
- 6- Where technically possible, it would be recommended to place both the display portion of the meter in the same recess as the water meter.



دليل ترميز التصميم الحضري والعمارة

7. المرافق والخدمات العامة :المرافق : التوصيلات الكهربائية ووسائل وطرق توصيلها بالشوارع

الخلفية:

إن التوصيلات الكهربائية وطريقة قياسها (أي العدادات الخاصة بقراءة الكهرباء) ومتابعتها توضع بداخل البنايات وذلك لأسباب أمنية أما تلك التوصيلات الكهربائية والخاصة بالشقق والمكاتب فيتم إدخالها وبسهولة تامة بوضع عدادات القراءة الخاصة باستهلاك الكهرباء بداخل هذه الشقق وتلك المكاتب وفي أماكن معروفة إلا أنه وفي حالات خاصة وفي المنازل التقليدية فإنه من الضروري بأن توضع هذه العدادات بداخل المنازل بحيث يثبت في كل جزء يخص كل شخص من قاطني العقار أو مالكي تلك الوحدات السكنية أي بداخل الشقة نفسها ولا بد لنا أن نعلم بأنه وفي هذه الحالة وعند أخذ قراءة عداد الاستهلاك للكهرباء لا بد من تواجد أحد أفراد الأسرة حتى يتمكن الموظف المختص من أخذ القراءة.

التنفيذ :

1. ومما هو جدير بالذكر أنه يتم تثبيت تلك المرافق على واجهة البناية ويحب أن تثبت بطريقة لكي تكون مخفية بقدر الإمكان بحيث لا ترى بسهولة وعندما يتم توصيل أكثر من سلك كهربائي بنفس البناية فإنه يتم وضعها جميعا بداخل قناة أو أنبوبة أو ماسورة خاصة حيث تجمع تلك الأسلاك معا علاوة على ذلك فإن هذه المواسير تكون ذات ألوان مشابهة لتلك الألوان التي تطلّى بها واجهات البنايات.
2. لا يسمح بإخراج أية أسلاك خارج البناية أو على واجهتها مثل الأسلاك الكهربائية وأسلاك التلفاز وغيرها.
3. ويشترط لتلك العدادات أنها يسهل قراءتها من الشارع أي من خارج الشقق أو حتى من خارج البناية أو العقار نفسه وينبغي أن نشجع على ذلك خاصة في حالة البنايات والعقارات الخاصة. وهذه العدادات يجب تثبيتها بداخل الجدران أو الحوائط وفي مواقع مناسبة بحيث لا تؤثر على واجهة البناية ولا تشوه المنظر العام للبناية وأن يتم تغطيتها بصندوق أو غطاء خشبي وعلى نمط تقليدي بحيث أن يكون لها فتحة أو شاشة تستخدم للقراءة وهذه الفتحات قد تترك مفتوحة بصفة مستمرة أو أنها تفتح بواسطة باب صغير يدور على محور دوران وتكون هذه الصناديق أو الأغطية لها تعريشة حولها ويتم طلائها باللون البني التقليدي.
4. إن قياس التجويف الخاص لوضع وتثبيت العداد لا بد وأن يكون قياسيا وتكون مسئولة عنة شركة المرافق العامة المحلية وذلك حتى يسهل المتابعة وكذلك الصيانة إن دعت الضرورة. وهناك بعض العدادات التي تنقسم إلى قسمين أو وحدتين إحداها وهي الوحدة الأساسية يتم تثبيتها بداخل الشقة أو البناية أما الوحدة الأخرى فيتم تثبيتها بالخارج وهذه الوحدة هي وحدة القراءة وتوضع بحيث تسهل عملية القراءة.
5. وقد يكون من الضروري , وهذا يعتمد على البناية نفسها , أنه يتم تثبيت العداد على دعامة أو عمود بداخل التجويف المخصص لذلك بحيث أن الجدار الخاص بالدعامة تلك لا بد وأن تكون على هيئة لوح رقيق من الحجر مما قد يتسبب في الإضرار به أو إتلافه عند تثبيت العداد بعدم حرص عند التركيب.
6. وفي بعض الأحوال الفنية ومن ناحية التقنيات الحديثة فإنه يمكن أن يتم تثبيت الأجزاء الخاصة بالقراءة في نفس الأماكن مع العدادات أي بداخل التجويف الخاص بوضع وتثبيت العداد ومثال لذلك عدادات قراءة استهلاك المياه.

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8. Utilities and Public Services: Gas Cylinder at Street Level

Background:

Metal, lockable storage bins for portable gas cylinders are a common feature adjacent to the main façade of the buildings or along the side. These often spoil the visual appearance of the traditional buildings.

Implementation:

1-Where found to be legal, the storage of gas cylinders facing the street or to the sides of the buildings should be done in such a way to be as unobtrusive and respect the traditional structural grid as much as possible.

2-The current metal bins should be replaced with bins constructed of block work covered with render, or concrete with a render appearance, color to match the exterior walls of the building.

3- The top of the storage bin is to contain no openings.

4-The front of the bin is to have a painted brown metal perforated door on hinges. To ensure safety, the door must be lockable.

5-Any pipe connections should be located directly behind the bins into the building and not surface mounted running along the exterior façade.

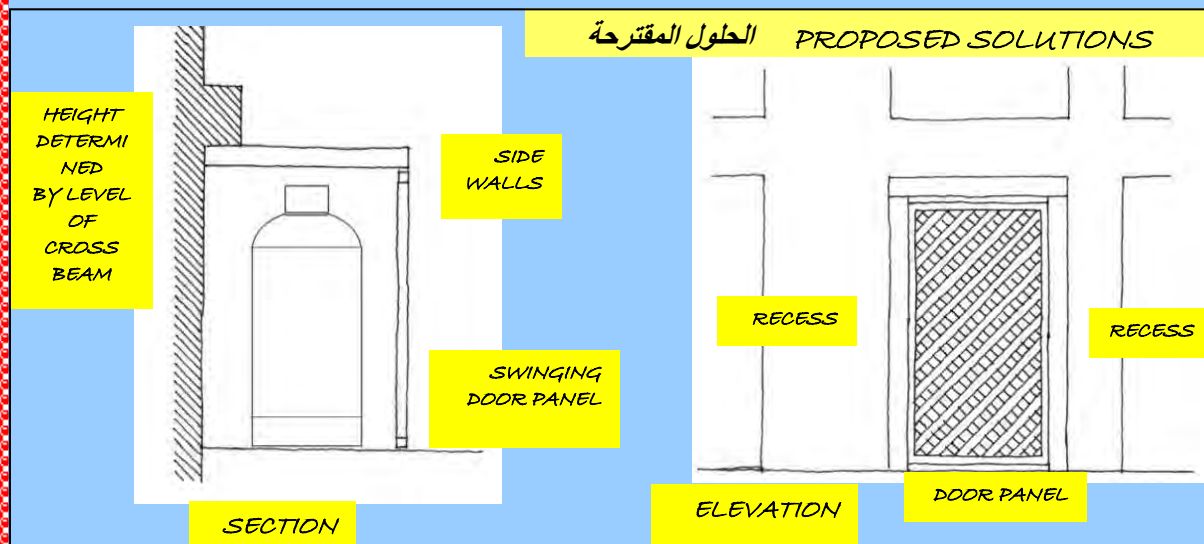
6- Where possible, the location of the storage bins should instead be built into exterior property boundary walls so that the door is flush with the outer face of the wall.

7- All new buildings must have storage bins that are either flush with the exterior building or boundary wall, or be located within the building, or on the property itself.

8-The design must be approved by the proper authorities as to compliance with their technical requirements.



EXISTING واقع الحال



دليل ترميز التصميم الحضري والعمارة

8. المرافق والخدمات العامة : أماكن تخزين أسطوانات الغاز على مستوى الشوارع

الخلفية:

لابد من وضع أسطوانات الغاز في صناديق حديدية للتخزين وفي أماكن معروفة ومحددة ومجاورة لواجهات المباني أو على امتداد جانبها وهذا مما يشوه المنظر العام للمباني خاصة التقليدية منها ، وبالتالي للمكان.

التنفيذ : وذلك على الوضع التالي:



EXISTING: FLUSH

- 1- إن خزانات اسطوانات الغاز التي تُواجه الشارع أو إلى جوانب المباني يجب أن توضع بطريقة لائقة ومناسبة وتُحترم الشبكة الهيكلية التقليدية قدر المستطاع كي يكون الوضع قانوني وشرعي إلى حد ما .
2. ولا بد أن نعلم أن الصناديق المعدنية الحالية يجب أن تُستبدل بالصناديق المبنية ولها غطاء معدني أيضا أو أن تكون هذه الصناديق من الخرسانة وأيضا ذات غطاء واضح وظاهر ولها لون يتماشى مع الألوان المحيطة ومع الجدران والحوائط الخارجية للمباني.
- 3- إن قمة الخزانات أو الصناديق لا تحتوي على أية فتحات.
- 4- إن جبهة الصندوق لابد ويتم طلائها بلون بني ومثقب الأبواب ولها مفصلات. ولضمان الأمان فإن هذه الأبواب لابد وأن تكون مغلقة.
- 5- إن أية أنبوبة أو أسطوانة ينبغي أن توضع وبطريقة مباشرة خلف الصناديق بداخل البناية ولا تثبت على أسطح البناية أو على واجهتها حتى لا تشوه المنظر العام .

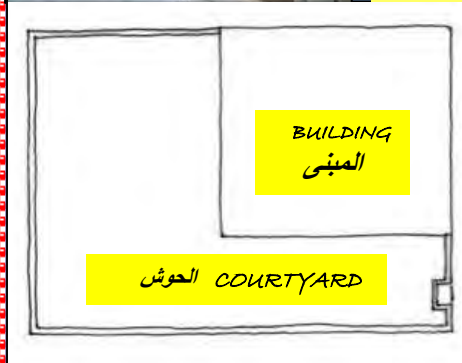
6- وحيث أنه من المحتمل أن يكون موقع صناديق التخزين يجب أن يتم بناءه خارج الحدود الخاصة للجدران الخارجية للمباني المجاورة وبطريقة لائقة لكي يتناسق مع الوجه الخارجي للحائط أو يتم وضعه بداخل البناية نفسها ويكون وكما سبق وذكرنا من قبل يكون بلى اللون.

7. لابد من أن يتم التصديق على التصميم عن طريق السلطات المعنية والمسئولة عن ذلك ويعتبر هذا كنوع من التطبيقات الواجبة والضرورية الصحيحة بالنسبة إلى الالتزام بمتطلباتهم التقنية.



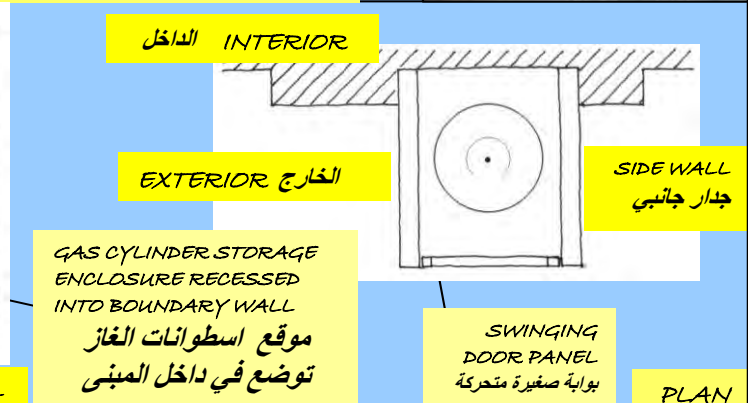
EXISTING: FLUSH WITH WALL
بعض الحالات الجيدة من المبنى يمكن أستعمالها

EXISTING: PROTRUDING
البروز من المني في الوقت الحاضر



PLAN

BOUNDARY WALL حدود الجدار



PLAN

9. Utilities and Public Services: Individual Garbage Bin Locations

Background:

The streets are **generally** not clean due to uncollected or not properly stored garbage, this is caused by the fact that the bins are too few in number and are of too limited capacity. The bins are unevenly distributed and often separated by great distances. The placement of the bins is often haphazard leading them to be placed directly beneath or adjacent to windows, thus creating unhealthy conditions.

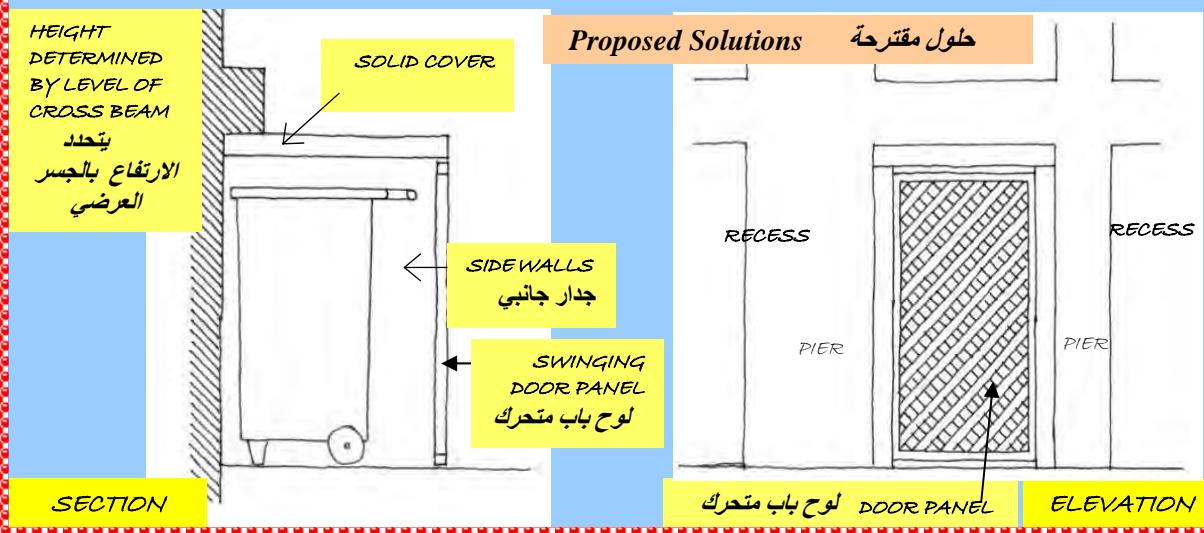
Implementation:

1- Suitable locations in front of existing buildings along the street should be identified for the permanent installation of garbage bins. The number and distances between them should be calculated upon the basis of the number of residents and types of building uses.

2- Storage boxes containing the garbage bins are to be placed in such a manner to be unobtrusive to the visual appearance of the façade, preferably located within the structural grid recess. These boxes can be of a permanent nature: constructed out of block work covered with render, or concrete with a render appearance, color to match the exterior walls of the building. The top of the storage box is to contain no openings. The front of the box is to have a swinging door constructed of timber to a traditional pattern of louvers or open lattice work painted brown, or be of a decorated brown metal panel. The garbage bin can be hung onto the inside of the swinging door for ease of access, or the bin may also stand on the ground within the enclosure. In either case, the garbage bins are to be of the type that meets the technical requirements of the agency or firm responsible for garbage collection.

3- Where possible, the location of the garbage bins should instead be built into exterior property boundary walls so that the door is flush with the outer face of the wall.

4- All new buildings must have garbage bin storage areas that are either flush with the exterior building or boundary wall, or be located within the building, or on the



دليل ترميز التصميم الحضري والعمارة

9. المرافق والخدمات العامة الأماكن الخاصة بصناديق القمامة

الخلفية:

إنّ الشوارع العامة لا تُنظف بسبب عدم جمع القمامة أو لأنه يتم تخزين القمامة بشكل غير صحيح ، والحقيقي وراء هذه الظاهرة هو أنّ عدد هذه الصناديق أيضاً قليل إضافة إلى سعتها المحدودة وبالتالي فإن هذه القدرة المحدودة جداً أدت إلى تفاقم هذه المشكلة. إنّ الصناديق تُوزع بشكل غير متساوي وتُفصل في أغلب الأحيان بمسافات كبيرة وأن هذه الأماكن لوضع تلك الصناديق ما هي إلا أماكن عشوائية بحتة وقد توضع في أماكن لا يمكن تصورها مما يتولد عنها العديد من المشاكل والأزمات مثل وضعها بطريقة مباشرة تحت أو بجوار النوافذ والشرفات (الدريشة) ويؤدي هذا إلى تفاقم الحالة الصحية.

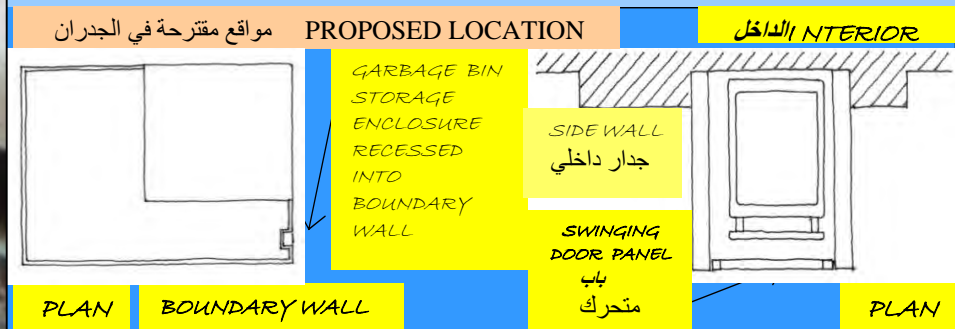
التنفيذ :

1. ويجب أن نأخذ في الاعتبار أنه يجب أن يتم وضع صناديق القمامة تلك في المواقع المناسبة أمام جراجات البنايات الدائمة وعلى طول الشارع. يجب أن يُحسب العدد والمسافات بينها على أساس قاعدة عدد السكان وأنواع استعمالات البناية.

2. إن صناديق التخزين والتي توضع بطريقة لائقة ومناسبة لتحتوي صناديق القمامة لابد أن تُوضع على هذه الطريقة وذلك الأسلوب الذي سيُكون مخفي ولا يبدو للعيان وبالتالي لا يسبب ما نسميه بالتلوث البصري للواجهة ، ولذا فإنه من المفضل وضعها في شبكة عميقة أو تجويف به شبكة بحيث تكون هذه الصناديق دائمة ولها أغطية أو أن تكون هذه الصناديق من الخرسانة لها أغطية ظاهرة وتبدو للعيان كما أن يكون لها لون مميز ومتناسق وملئم مع ما يحيط بهذه الصناديق من ألوان محيطية في البيئة وجدران حوائط البنايات المجاورة. إنّ قمة صندوق التخزين لَن يحتوي أية فتحات ثم إن الجهة الأمامية للصندوق لا بد لها من وجود باب خارجي يفتح ويغلق عن طريق محور دوران آمن ومصنوع من نوع معين من الأخشاب يسمى التيمبر ويكون له فتحة لابد من دهانها باللون البني أو أن يكون الباب الخاص به من المعدن المطلي أيضا باللون البني . يُمكن أن تُمسك أو تُعلق صناديق القمامة بواسطة علاقة تتواجد بداخل الباب الدائر حول المحور لسهولة الوصول إلى ما بداخله ، أو قد يكون أيضا على هيئة إيقافه في شكل رأسي على الأرض بداخل تطويق أو حظيرة من السياج لمزيد من الأمان وفي كل الحالات ..إن صناديق القمامة تلك لابد وأن تكون من الأنواع التي تتفق مع المتطلبات الفنية والتي تحددها الوكالة أو الشركة المسؤولة عن جمع القمامة.

3. وحيث أنه من المحتمل أن يكون موقع لصناديق القمامة فلا بد من ذلك وأن يكون بني اللون إلى حدّ التوافق مع حوائط البنايات المجاورة واحترام الملكية الخاصة لكل مالك.

4. من المعروف والمفروض أن تكون كلّ البنايات الجديدة لها ما يخصها يجب أن يكون عندها صناديق قمامة عند الكراج الخاص بكل بناية أو توجد مساحات أو أماكن شاغرة للقمامة وذلك لتجمع القمامة من البنايات المجاورة لموقع الصناديق خاصة لتدقق القمامة من تلك البنايات والجدران الخارجية لتلك البنايات كما أنه من الممكن أن توضع تلك الصناديق بداخل المنازل والبنايات الخاصة نفسها.



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10-Utilities and Public Services: Neighborhood Garbage Collection Points

Background:

The streets are generally not clean due to uncollected or not properly stored garbage, this is caused by the fact that the bins are too few in number and are of too limited capacity. In addition, the bins are unevenly distributed and often separated by great distances. Furthermore, large capacity bins with wheels often impinge upon the street and pose a danger to pedestrians and to vehicles.

Implementation:

- 1- Suitable permanent locations need to be identified for additional garbage bins of suitable capacity. Such locations should be on public property.
- 2 - Such locations can be integrated within parking lots and/or public open spaces.
- 3 - The number of bins to be accommodated depends upon the size of the available space and that space's primary usage.
- 4 -The bins should collectively be enclosed by open screen walls or fences of 1.75 meters height on three sides
- 5 -If constructed of timber, these screen fences should have a traditional pattern of louvered or open latticework, mounted on appropriately sized timber posts. All timber elements is to be painted a traditional brown tone.
- 6- If constructed of masonry or concrete, these walls are to have a smooth render appearance and be painted a suitable sand color to match the nearby buildings. Provision should be made to allow vines to grow up the wall to enhance the visual appearance and avoid graffiti.
- 7- The opening in the wall or fence should be located, if possible, so as to minimize the view from the street into the enclosure.



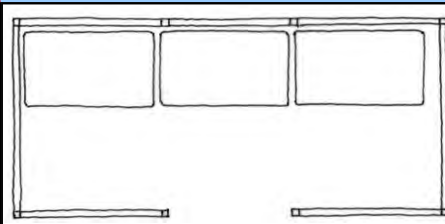
UNACCEPTABLE
غير مقبولة

UNTTACTIVE AND DANGEROUS
غير جذابة وخطرة



حلول مقترحة

PROPOSED SOLUTIONS



UNIT TYPE WITH SIDE OPENING³

ACTUAL SIZE OF SCREENED AREA TO BE DETERMINED ON SITE

ثلاث وحدات مع فتحة وسطية
الحجم الحقيقي لمساحة القواطع يتحدد في الموقع

دليل ترميز التصميم الحضري والعمارة

10- نقاط تجمع قمامة الحيّ والبنائات المجاورة في نفس

الخلفية:

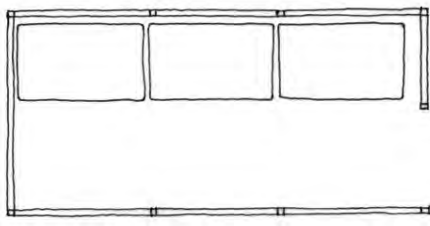
إنّ الشوارع العامة لا تُنظف بسبب عدم جمع القمامة أو لأنه يتم تخزين القمامة بشكل غير صحيح ، وأن السبب الرئيسي والحقيقي وراء هذه الظاهرة هو أنّ عدد هذه الصناديق أيضاً قليل إضافة إلى سعتها المحدودة وبالتالي فإن هذه القدرة المحدودة جدا وبالتالي فقد أدت إلى تفاقم هذه المشكلة. إنّ الصناديق تُوزع بشكل غير متساوي وتُفصل في أغلب الأحيان بمسافات كبيرة وأن هذه الأماكن لوضع تلك الصناديق ما هي إلا أماكن عشوائية بحتة وقد توضع في أماكن لا يمكن تصورها مما يتولد عنها العديد من المشاكل والأزمات مثل وضعها بطريقة مباشرة تحت أو بجوار النوافذ والشرفات (الدريشة) ويؤدي هذا إلى تفاقم الحالة الصحية أي وضعها في أماكن بالشارع وفي أماكن قد تعتبر خطيرة جدا وتشكل خطر للمشاة أو المارة والسيارات أيضا .

التنفيذ :

- 1- إن المواقع المناسبة لصناديق القمامة الضرورية واللازمة لا بد وأن تحدد والتي على ضونها يمكن تحديد الضّروري منّ الصناديق القمامة الإضافية وأن تُمَيَّز احتياجاتنا من القدرة والسعة المناسبة لتلك صناديق. ومن أمثلة هذه المواقع يجب أن تُكوّن على الملكية العامة أي للاستخدام العام.
- 2- يُمكن أن تُكامل وتتناسب مثل هذه المواقع مع الباركات أو مواقف السيارات المتعددة والأماكن العامة المفتوحة .
- 3- إن عدد الصناديق الذي يلزم لكل حي يعتمد على حجم ومساحة الأماكن الشاغرة والتي لها استعمال أساسي آخر .
- 4- ومما هو ضروري أن هذه الصناديق يتم جميعها وبشكل جماعي على أن يحيط بها جدران خارجية أو أسوار بحيث يكون ارتفاعها من جميع الجوانب مالا يقل عن 1.75 متر.
- 5- في حالة بناء تلك الأسوار أو الجدران من خشب التيمبر فلا بد وينبغي أن تكون ذات الإطار النمطي أو التقليدي والذي له فتحات وكذلك شبك ويكون مثبت بأعمدة من نفس نوع الخشب التيمبر أيضا ومما هو جدير بالذكر أن جميعها سواء السور أو الأعمدة فيتم طلائها باللون البني أيضا حتى تلائم وتتناسق مع ما يحيط بها .
- 6- أن يتم بناءها من الطابوق أو الخرسانة ، وهذه الحوائط أو الجدران. وما لها من ملمس ناعم في المظهر وقد تم طلائه بنوع معين من اللون الرملي لكي يتناسب ويتلاءم مع البنائات القريبة والمحيط بها من جميع الجهات وبشرط أنه يجب أن يسمح لنباتات الكرمات بالنمو وبلوغ الحائط لتحسين المنظر البصري العام .
- 7- وهناك فتحة في الجدار أو الأسوار أو السياج ومن الممكن يجب أن تقلل بقدر الإمكان المنظر السيء أو العام بداخل كل الشوارع.

حلول مقترحة

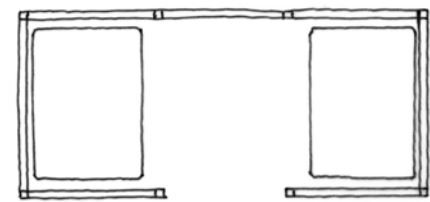
PROPOSED SOLUTIONS



UNIT TYPE WITH SIDE OPENING 3

ACTUAL SIZE OF SCREENED AREA TO BE DETERMINED ON SITE

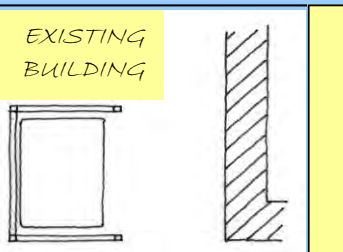
ثلاث وحدات مع فتحة جانبية
الحجم الحقيقي لمساحة القواطع يتحدد في الموقع



UNIT TYPE 2

ACTUAL SIZE OF SCREENED AREA TO BE DETERMINED ON SITE

وحدتان مع فتحة وسطية
الحجم الحقيقي لمساحة القواطع يتحدد في الموقع



SINGLE UNIT TYPE CA. 1.20m

PLACEMENT TO MINIMIZE PERSPECTIVE VIEW (VIEW OF CONTAINERS)
OPENING PLACED TO REAR OR SIDE DEPENDING UPON INDIVIDUAL SITE AND CIRCUMSTANCES

نوع وحدة منفردة بمقدار 1.2 متر
توقيع الوحدة يجب أن يقلل في النظر الى الحاوية

Manual of Urban Design, Architecture

11-Utilities and Public Services: Public Utility Installations

Background:

Various utility installations have been built throughout the traditional areas with no thought to design and placement within the urban setting. Often these installations are visually unappealing and are placed in a location that impedes future development and the repair of the urban fabric.

Implementation:

1- Where such installations are not contained within a built structure:

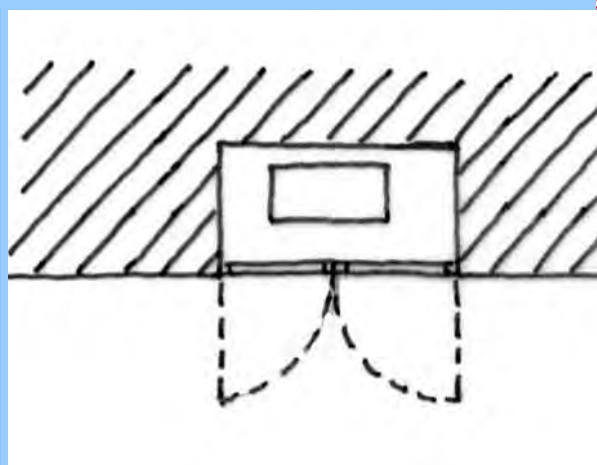
- 1) Light weight screens are to be constructed of timber and the design is to be based upon the traditional louvered or open latticework pattern.
- 2) The screens are to be mounted on appropriately sized timber posts which are fixed to an appropriate foundation or anchor as necessary.
- 3) The screens may be attached to the posts either as lift-out or swinging panel where access is necessary to the equipment. Appropriate distances from the machinery should be taken into account when placing the screens.
- 4) The height of the screens is to be equal to the highest machine or part thereof, minimum 2.5 meters. The panels are to be evenly spaced if possible.
- 5) As an alternative, masonry walls without a roof may be built around the installation. The height of the walls is to be equal to the highest machine or part thereof, minimum 2.5 meters. A gate or door may be provided for access, the door is to be constructed of timber and the design is to be based upon the traditional louvered or open latticework pattern.
- 6) Screens and doors are to be painted a traditional brown tone.

2- Where such installations are within a built structure:

- 1) Trellises of open lattice work design are to be mounted on the walls of such installations where technically allowed, no ventilation or other necessary openings may be covered unless by permission of the utility company.
- 2) The screens are to be painted a traditional brown color.
- 3) Provision should be made to allow vines to grow up the wall to enhance the visual appearance and avoid graffiti.

3- Where such installations are located between two buildings:

A timber screen or masonry wall connecting the two buildings is to be erected with a gate or door providing access. All design and material guidelines described above apply.



EXISTING UTILITY INSTALLATION BETWEEN TWO BUILDINGS: ADD SCREENS MIN. 3m HIGH

خدمات كهربائية وتوصيلات بين بنائين وذلك بإضافة حواجز بارتفاعات 3 متر

دليل ترميز التصميم الحضري والعمارة

11- المرافق والخدمات العامة : تجهيزات مرفق عام

الخلفية:

إن تجهيزات المرافق المختلفة بُنيت وشيدت في كافة أنحاء المناطق التقليدية بدون عمل أية تصميمات سواء في المكان أو الزمان لتلك المرافق. وفي أغلب الأحيان هذه التجهيزات غير جَذابة وغير مريحة للبصر وبالتالي ليس لها من الشكل الملائم من الناحية البصرية ولا يتناسب مع التطور والنسيج الحضري.

التنفيذ :

- 1- إنه من الواجب مراعاة المواقع المناسبة لصناديق القمامة بحيث لا تتواجد بداخل البنايات بحيث يتوافر فيها الشروط التالية :
 - (1) أن تكون حوائط صناديق القمامة خفيفة الوزن ومصنوعة من خشب التيمبر وأن تكون لها أبواب من الأنواع النمطية أو التقليدية.
 - (2) أن تكون حوائط صناديق القمامة مثبتة على أعمدة أو مناصب من الخشب المعروف باسم التيمبر وبحجم وشكل ملائم .
 - (3) قد تُربط الحوائط بالمناصب أو الأعمدة إما على هيئة مصعد خارجي أو لوح بابي دائري عندما تقتضي الضرورة ذلك وهذه الآلية يجب أن تؤخذ في الاعتبار عند وضع وتشبيد تلك المنصات أو الأعمدة.
 - (4) إن ارتفاع هذه الحوائط لابد وأن يساوي ارتفاع المكينة أو الجزء العلوي لها وذلك بحد أدنى 2.5 متر. بالإضافة إلى أن تلك الحوائط ستُباعَد بانتظام إذا كان بالإمكان.
 - (5) وكوضع بديل لهذه الحيطان أن تكون هذه الحوائط عبارة عن بناء بدون سقف قد يُبنى حول التركيب أو البناية. حيث أن ارتفاع الحوائط سيُصبح مساوي لارتفاع الماكينة أو الجزء الأعلى من ذلك، حد أدنى 2.5 متر. ويمكن أن يكون الباب أو البوابة مصنوعة من الخشب والتصميم سيُصبح على أساس الفتحات التقليدية وبطريقة نمطية.
 - (6) إن هذه الأبواب لابد وأن تطل باللون البني التقليدي.
- 2- حيث أن مثل هذه التجهيزات ضمن بُنيى تركيبها:
 - (1) هناك تعريشات على شبك من النوع المفتوح وأن يكون ذات تصميم وبالطريقة الفنية المسموح بها وبدون فتحات والتي قد يتم تغطيتها إذا لم تطلب شركة المرافق غير ذلك
 - (2) على أن يتم دهان هذه الأبواب باللون البني التقليدي
 - (3) بحيث يسمح لنبات الكرمات وبلوغ الحائط لتحسين المنظر البصري العام . وهناك فتحة في الجدار أو الأسوار أو السياج ومن الممكن أن تقلل بقدر الإمكان المنظر السيء أو العام بداخل كل الشوارع.
- 3- حيث مثل هذه التجهيزات واقعة بين بنايتين أن لأبواب أو البوابات والمصنوعة من خشب التيمبر والطوب أو مواد البناء والتي تصل بين بنايتين ولكي تكون مقامة وبالتحديد على أساس عمل الأبواب وتزويدها في أي وقت.

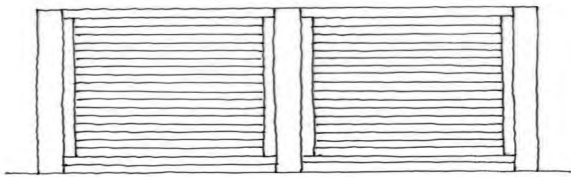


SCREENS MOUNTED ON SIDES
OR FORM COURTYARDS
قواطع تسور الجوانب وتشكل فناء (حوش)

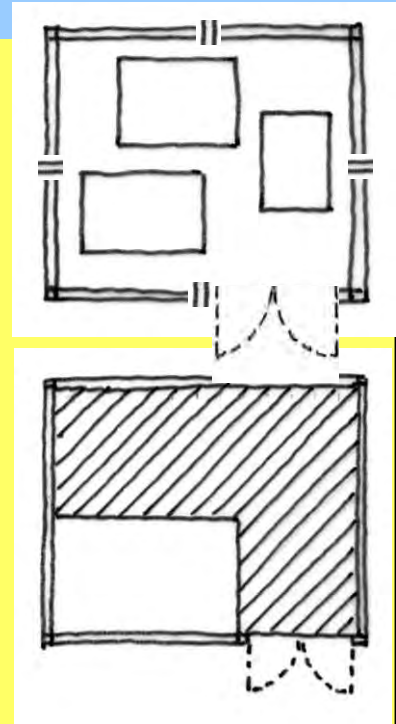
DISMOUNTABLE
SCREENS
قواطع متفككة



SCREENS ERECTED
AROUND UTILITY
INSTALLATION
قواطع مشبكة تسور مولدات
الكهرباء



EXAMPLE OF LOUVERED SCREENS مثال لوضع قواطع مشبكة



Manual of Urban Design and Architecture

12-Utilities and Public Services:

Background:

Electrical mains and telephone lines are often surface mounted on the facades of the buildings taking no regard of the composition of the facade thus spoiling the visual appearance of the building.

Implementation:

1- Utilities should be located under the street as is the practice in most urban areas.

2- If the placement of public utilities on the façade of the building cannot be avoided, then the placement should be done in such a way to be as unobtrusive as possible. When more than one wire runs along the building, these wires are to be bundled together, enclosed in a conduit running in a straight line without bowing or bending. This applies to any type of utility. This conduit is to be the same color as the façade. This is the responsibility of the responsible utility authority, not the owner of the building.

3- No wires of any type once they enter the building are to be permitted to re-emerge onto the façade.

4- If streetlights are mounted onto the facades, the lights should be of the same type, design and size, mounted in locations that are most unobtrusive, respecting the composition of the façade.

An appropriate design should be selected after consultation with the relevant authority and used throughout the protected areas.



UNATTRACTIVE AND DANGEROUS

دليل ترميز التصميم الحضري والعمارة

12- المرافق والخدمات العامة: تثبيت إضاءة الشوارع على واجهات البنايات

الخلفية:

إن وسائل توصيل الكهرباء وكذلك خطوط الهواتف أو التليفونات يتم تثبيتها على واجهات البنايات بغض النظر وفي أغلب الأحيان عما يسببه تركيب تلك الوسائل ومن فساد الذوق والمنظر العام للبنية والتالي للمكان.

التنفيذ:

- 1- إنه ينبغي بل ويجب أن يكون مواضع تركيب المرافق في مكان تحت الشارع وذلك بطريقة عملية خاصة في المناطق الحضرية.
- 2- في حالة تثبيت تلك المرافق العامة على واجهة البناية على أن الحل الوحيد للتثبيت فإنه وفي هذه الحالة يجب أن يركب بشيء من الحرص والحذر حتى يتم المحافظة على المنظر العام وعلى شكل الواجهة. إن التثبيت يجب أن يُعمل بطريقة لكي يكون مخفي بقدر الإمكان. عندما يمتد أكثر من من سلك واحد عبر واجهة البناية فإن هذه الأسلاك يجب أن تُثبت بطريقة لكي تكون مخفية بقدر الإمكان بحيث لا ترى بسهولة وهذه الأسلاك سترتبط معا في حزمة وضعها جميعا بداخل قناة أو أنبوبة أو ماسورة أو قناة خاصة في خط مستقيم بدون انحناء أو حتى قد تكون هناك انحناءات في هذه المواسير لكن وفي كل حالة يجب أن تكون ذات أشكال جيدة ولا تسيء للمنظر العام للمكان يتم تطبيق هذه القواعد على أي نوع الخدمات العامة وتعتبر تلك اللوائح وتطبيقها من المهام والمسؤوليات التامة لهيئة المرافق المعنية بذلك وليس مالكي البنايات أنفسهم .
- 3- لا يسمح بإخراج أية أسلاك خارج البناية أو على واجهتها مثل الأسلاك الكهربائية وأسلاك التلفاز وغيرها.



- 4- في الحالات التي يتم فيها تثبيت الإضاءة الخاصة بالشوارع على واجهات البنايات فإن هذه الإضاءات لابد وأن تكون من نفس الأنواع التي والتصميمات والمقاسات وطريقة التثبيت ولا بد من وضعها في أماكن ومواقع التي تكون مخفية جداً بحيث تحترم وتتوافق مع واجهات تلك البنايات. ويجب أن يكون هناك تصميمات ملائمة ومتناسقة مع البيئة والبنايات المحيطة وبالطبع تكون تحت مسؤولية واستشارات محسوبة من قبل الجهات المعنية المختصة ويجب أن تستخدم في كل الأنحاء بما يضمن هذه حماية المنطقة بصفة عامة.

DAMAGE TO BUILDING WALL

يدمر جدران المبنى

Manual of Urban Design and Architecture

13-Utilities and Public Services: Water Meters and Connections to the Mains in the Street

Background:

Currently, water connections and meters are located on the exterior of many of the traditional buildings. A vertical pipe rises to a height of approximately 1.5 meters with the water meter fixed to the building at this level. This arrangement spoils the visual appearance of the building.

Implementation:

1. The placement of the water meters onto the façade of the building should be done in such a way to be as unobtrusive as possible.
2. No pipes of any type once they enter the building are to be permitted to re-emerge onto the façade; this includes all plumbing. The only exception is rain water down pipes.
3. The water meter is to be recessed within the wall at a suitable location that does not impinge; Upon the appearance of the façade, and be covered by a wooden screen of a traditional pattern, either louvered or open latticework, painted traditional brown. The screen can be either a lift-out or swinging for access.
4. The size of the recess and type of meter must be checked with the local utility company as to compliance with their technical requirements.
5. Depending upon the building, it may be necessary to mount the meter to the side of the pier within the recess. Often the walls of the recess are thin stone panels and will be damaged if the meter is affixed to them.
6. If it is not technically possible to locate the meter in the recess, then the meter cover and its pipe must be of the same color of the façade or painted a traditional brown.
7. Where technically possible, it would be recommended to place both the water meter in the same recess as the electric display meter.



الحال EXISTING



الحل SOLUTION

دليل ترميز التصميم الحضري والعمارة

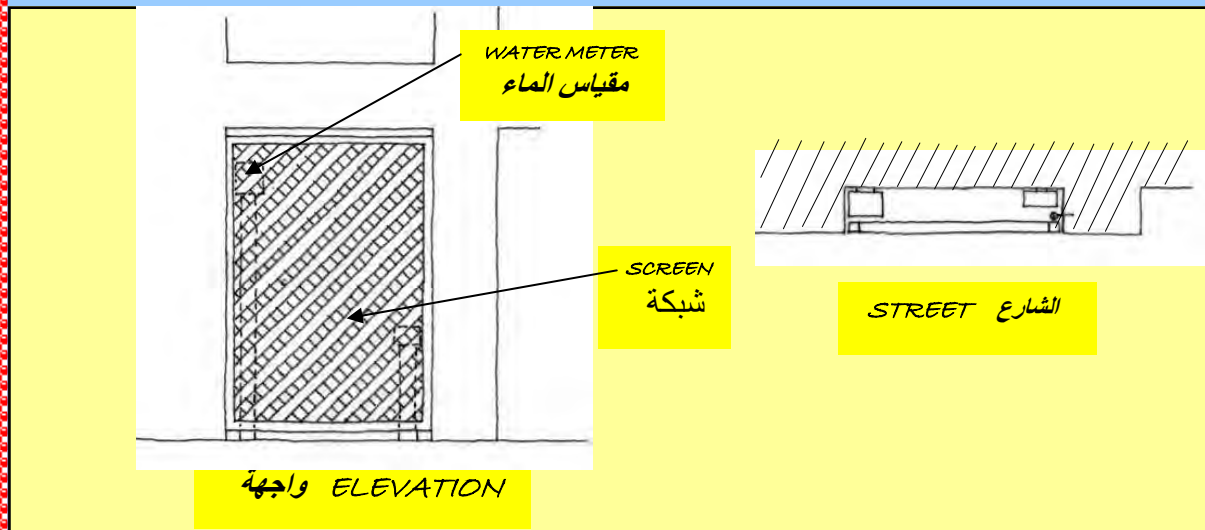
13- المرافق والخدمات العامة: توصيلات المياه وعداداتها

الخلفية:

إن توصيلات المياه وطريقة قياسها (أي العدادات الخاصة بقراءة الماء) ومتابعتها توضع خارج البنايات التقليدية بشكل عام وذلك لأسباب بيئية . وهناك مواسير المياه الرأسية والتي يبلغ ارتفاعها حوالي المتر والنصف تقريبا ولا بد أن تكون مثبتة في البنايات على هذا الارتفاع وبحيث لا يؤدي ذلك النظام والتثبيت لأي خلل أو تشويه في النظام العام والشكل الجمالي للمكان والبيئة المحيطة أو البنايات نفسها.

التنفيذ:

- 1- ومما هو جدير بالذكر أنه يتم تثبيت تلك العدادات على واجهة البناية ويجب أن تُثبت بطريقة لكي تكون مخفية بقدر الإمكان بحيث لا ترى بسهولة.
- 2- ممنوع منعاً باتاً ظهور أي نوع من الأنابيب خارج واجهات البنايات وبشرط أن هذه الأنابيب أو المواسير يسهل إعادة إخراجها في أي وقت لإجراء أعمال السباكة أو الصيانة الدورية عليها غير أن الاستثناء الوحيد لهذا الوضع هي المواسير الخاصة بالأمطار وعلاوة على ذلك فإن هذه المواسير تكون ذات ألوان مشابهة لتلك الألوان التي تطلّى بها واجهات البنايات.
- 3- وتوضع العدادات الخاصة بقراءة استهلاك المياه بداخل الحوائط ولا بد أن تكون بطريقة مناسبة للغاية حتى تتماشى مع الذوق العام السائد وبصفة خاصة أشكال وألوان واجهات البنايات وعلاوة على ذلك فإن يجب تغطيتها بصناديق خشبية من النوع التقليدي أو النمطي. ويشترط لتلك العدادات أنها يسهل قراءتها من الشارع أي من خارج الشقق أو حتى من خارج البناية أو لفقر نفسه وينبغي أن نشجع على ذلك خاصة في حالة البنايات والعقارات الخاصة.
- 4- إن قياس التجويف الخاص لوضع وتثبيت العداد لا بد وأن يكون قياسياً وتكون مسؤولة عنه شركة المرافق العامة المحلية وذلك حتى يسهل المتابعة وذلك الصيانة إن دعت الضرورة إلى ذلك. وهناك بعض العدادات التي تنقسم إلى قسمين أو وحدتين إحداها هي الوحدة الأساسية يتم تثبيتها بداخل البناية أما الوحدة الأخرى فيتم تثبيتها بالخارج وهذه الوحدة هي وحدة القراءة وتوضع بحيث تسهل عملية القراءة.
- 5- وقد يكون من الضروري . وهذا يعتمد على البناية نفسها , أنه يتم تثبيت العداد على دعامة أو عمود بداخل التجويف المخصص لذلك بحيث أن الجدار الخاص بالدعامة تلك لا بد وأن تكون على هيئة لوح رقيق من الحجر مما قد يتسبب في الإضرار به أو إتلافه عند تثبيت العداد بعدم حرص عند التركيب. وفي بعض الأحوال الفنية ومن ناحية التقنيات الحديثة فإنه يمكن أن يتم تثبيت الأجزاء الخاصة بالقراءة في نفس الأماكن مع العدادات أي بداخل التجويف الخاص بوضع وتثبيت العداد ومثال لذلك عدادات قراءة استهلاك المياه.
- 6- وهذه العدادات يجب تثبيتها بداخل الجدران أو الحوائط وفي مواقع مناسبة بحيث لا تؤثر على واجهة البناية ولا تشوه المنظر العام للبناية وأن يتم تغطيتها بصندوق أو غطاء خشبي وعلى نمط تقليدي بحيث أن يكون لها فتحة أو شاشة تستخدم للقراءة وهذه الفتحات قد تترك مفتوحة بصفة مستمرة أو أنها تفتح بواسطة باب صغير يدور على محور دوران وتكون هذه الصناديق أو الأغشية لها تعريشة حولها ويتم طلائها باللون البني التقليدي.
- 7- إذا لم يكن من الممكن من الناحية الفنية والتقنيات الحديثة أن توضع العدادات بهذه الطريقة وبذلك الكيفية فإنه ولا بد من تغطية هذه العدادات والمواسير الخاصة بالمياه باللون الذي يتناسب وذلك اللون لواجهة البنايات أو على أدنى تقدير طلائها باللون البني التقليدي أو النمطي المتعارف عليه.



14-Building Property and Location: Alignment of Building Edges on Streets

Background:

The reasons why street edges in the heritage areas are not properly aligned and uniform is because the built fabric abutting the streets were built incrementally. The principle followed by each owner of a building under construction was to ensure that the minimum right-of-way of the street be maintained and not necessarily follow a uniform alignment. A primary reason for this rational was the method of transportation relied on beasts of burden that could negotiate non-uniform street edges and changes in the levels of street surfaces. With the introduction of the car, the perception emerged that the streets in the heritage areas were inferior and had to be straightened.

There are two laws in Bahrain that are slowly eroding the non-uniform street edges that contributes to the special character of the heritage areas. The first is Decree number (27) for the year 2005 that contains Articles (19) and (52) that require setbacks; when implemented would eliminate protrusions in streets. This law applies to building in all of the Kingdom of Bahrain. The second law is in the Decree number (8) for the year 1970 that contains section (B) of Article (6) that stipulates that no compensation is to paid for eminent domain, i.e. the taking of private property for the public good including taking parts of buildings for widening streets.

Implementation:

- 1-The current effective laws, mentioned above, should no longer be enforced in the designated heritage areas.
- 2-In an exceptional condition where there is a protrusion into a street that impedes traffic, particularly if that part of the street is open for vehicular traffic, then it is acceptable to ask the owner to remove such protrusion. However, in return:
 - (1) He should be compensated for the space lost, for all building costs, and for his time an trouble,
 - (2) He would be allowed and/or encouraged to build a *Sabat* to compensate for the space lost and would also be allocated a sum of money as a contribution towards building a *Sabat*. The formula for cost sharing should be developed.
 - (3) He would be allowed to build an additional level provided it is within the heights limits (see Urban/Design Issue # 29 on Heights of Buildings).

Part of the Property might have to be given to the street

جزء من بعض العقارات تعطى الى الشارع



IF VEHICULAR ACCESS IS DESIRED IN THIS STREET, THEN FOUR PROPERTIES MIGHT HAVE TO YIELD PART OF THEIR BUILDINGS TO THE STREET. THEY ARE SMALL PROPERTIES AND WOULD BE SEVERELY DAMAGED.

إذا أريد ان تدخل المركبات الى هذا الطريق فإنه يحتاج الى قطع اربعة عقارات لغرض التوسعة، لكونها عقارات صغيرة المساحة ،و يكون الضرر كبيراً



دليل ترميز التصميم الحضري والعمارة

14-الموقع وخصوصية المبنى ومميزاته : اصطفا ف حافات البنايات على الشوارع

الخلفية:

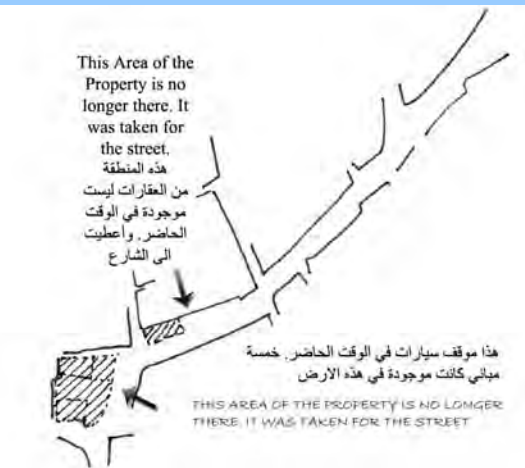
إنه من الأسباب التي في تلك المناطق الأثرية ومناطق التراث وعلى حواف الشوارع والذي لا يعتبر مناسباً أن تصطف البنايات هكذا والذي بسببه يتم بناء ذلك النسيج والنظام الذي يُتأخَّم الشوارع بشكل تزايدٍ وخارج بناء البنايات التقليدية. وهناك مبدأ لكل من مالكي البنايات تحت الإنشاء ولابد من أن تؤكد ضرورة الحفاظ على حقوق الشارع والعمامة من الناس حتى تسهل عملية الصيانة الدورية والغير ضرورية والتي يجب أن تصطف في اصطفا ف موحد ومتسق. وهناك سبب أساسي وأولى لهذه الأمور المقبولة وهو طريقة الانتقالات الموثوق بها والمضمونة خاصة بالنسبة للحيوانات والبهايم حيث يمثل هذا عبء كبير جداً ويتطلب الجهد والمفاوضات للسير بهم في الطرق الغير رئيسية وعلى حواف تلك الشوارع والتغيرات التي تحدث في مستويات الشوارع أسطحها حيث أنه بمقدمة السيارة ما يؤثر على الشوارع نتيجة وجود بعض البروزات بها ، والمهم هو إدراك تلك البروزات التي قد تخرج إلى الشوارع وتؤثر فيها وفي أسطحها وذلك للحفاظ على المناطق الأثرية وبالطريقة السليمة.

علما بأن هناك قانونان في البحرين والذين يساهمان وببطيء ويؤثر في حواف الشارع وبطريقة غير منتظمة حيث يُساهم في صبغ الشخصية الخاصة لتلك المناطق الأثرية هناك عدة قواعد قانونية أولها هو الاشتراطات التنظيمية بموجب القرار رقم (27) لسنة 2005 والذي حيث أن المادة رقم 19 والمادة رقم 52 واللذين تتطلبان إعادة النظر حيث أنهما وعند التطبيق قد أباحا وجود بروزات في الشوارع وبالتالي يترتب عليها الإضرار بالشوارع كما سبق وذكرنا من قبل ويجب أن نعرف أن هذا القانون يطبق على المباني ويشمل بذلك جميع المباني بمملكة البحرين. أما القانون الثاني فإنه يشمل اتفاقاً رقم (8) لعام 1979 والذي يحتوى على القسم الثاني منه المادة رقم (6) والتي تشترط أنه ليس هناك أية تعويضات مدفوعة من قبل مالك هذه البروزات.، بمعنى أن الملكية الخاصة والتي تتضمن الملكية العامة وأجزاء من البنايات في تلك الشوارع الفسيحة والمتسعة.

التنفيذ:

- 1- إن تلك القوانين الفعالة الحالية ، والتي ذكرت من قبل ، لا ينبغي لها أن تقرض في المناطق الأثرية أو أماكن التراث.
- 2- إذا كان هناك شوارع مفتوحة للمرور أو حتى أجزاء منها ففي هذه الحالة يحق للمالك أن يطلب وبشكل إستثنائي فقط إزالة تلك البروزات أو النتوءات والتي تعرقل حركة المرور بل وقد يصبح للمالك الحق أيضاً في إزالة تلك البروزات وهذا النتوء ومع ذلك فقد يترتب على هذا التصرف:

- 1 - لابد من التعويض المناسب والملائم عن المساحات التي تم شغلها وكذلك عن الأضرار والخسائر التي لحقت بالبنايات وكذلك يمكن تعويضات عن الوقت الذي أهدر والإزعاج الذي تم من جراء ذلك.
- 2- ينبغي أن نسمح ونشجع لبناء ما يعرف بالسبات على أن يتم تعويض عن المساحة التي فقدت كما ينبغي أيضاً أن تخصص موارد للمساهمة في السبات الذي يتم إنشائه ويتطور شكل المساهمة والمشاركة تلك بمرور الوقت وحسب ما يستجد.
- 3- يمكن أيضاً بناء مستوى إضافي في حدود الارتفاعات المسموح بها وذلك طبقاً للشروط والمواصفات المنصوص عليها في مسألة التصميمات الحضرية والعمرانية رقم 29 والتي يهتم ويختص بالمواضيع المتعلقة بارتفاعات البنايات.



THIS CONFIGURATION MIGHT BE PRESERVED, AND VEHICULAR ACCESS SHOULD NOT BE ALLOWED



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15 - Building Property and Location: Consolidation of Small Plots

Background:

The sizes of the individual properties are in many cases too small, making it often uneconomic to construct new buildings due to their limited sizes. This has led to many properties being left vacant.

Implementation:

1- In the case where two or more adjacent vacant properties exist, the owners may agree to sell or acquire the adjacent property or properties and consolidate them into one larger property under one or joint ownership. The owner's may then construct a new building upon the site as allowed under the conservation codes. The composition of the facades of the new building must conform to the architectural guidelines approved for the conservation zones. Care should be taken to ensure that the composition of the facades does not become overly long.

2. In the case where the owner of a traditional building is able to acquire his neighbor's vacant property, he should be allowed to extend his existing building. If this extension is constructed using traditional methods, then the total appearance of the existing and the extension may be that of either one or two buildings. If the extension is constructed of non-traditional materials, then the façade appearance must be of two buildings.



دليل ترميز التصميم الحضري والعمارة

15-الموقع وخصوصية المبنى ومميزاته : اصطفاف حافات البنايات

الخلفية:

إن من الخواص والملكيّات الفردية لها العديد من الحالات الصغيرة جداً ، يجعله غير إقتصادي في أغلب الأحيان لبناء البنايات الجديدة بسبب ارتفاعاتها المحدودة. ويترتب على ذلك أن يترك العديد من الملكيّات أن تُترك شاغرة.

التنفيذ :

1- وفي هذه الحالة التي يكون فيها اثنان أو أكثر من الملكيّات المجاورة شاغرة ، فإنه قد يوافق الملاك في هذه الحالة على بيع أو اكتساب الملكيّة أو الملكيّات المجاورة وبذلك يتم إدراجهم جميعاً تحت ملكيّة واحدة وشاملة وأكبر تحت أسم مالك واحد أو ملكيّة مشتركة.

2- وقد يقوم هذا المالك أو هؤلاء الملاك ببناء بناية أو بنايات جديدة على الموقع كما تُسمح له الظروف بذلك في ظل ما يكفل الحماية والمحافظة على البنايات والبيئة المحيطة من بينها الأخذ في الاعتبار تركيب واجهات البناية الجديدة يجب أن يتوافق إلى التعليمات المعماريّة والتي تتطابق والمواصفات التي وضعتها الجهات المسؤولة والمختصة بحماية هذه المناطق مع العناية التامة للشكل والذوق العام للمكان وأنه يجب أن تُؤخذ الضمانات الكافية التي تضمن هؤلاء الملاك من تركيب الواجهات في أسرع وقت ممكن دون تأخر أو تأخير وأن ذلك لن يستغرق وقتاً طويلاً جداً ولكن في الحدود المعقولة والمقبولة.

3- في الحالة حيث أن مالك البناية التقليدية والقادر على شراء واكتساب ملكيّة جاره الشاغرة ، يجب أن يُسمح لتمديد بنيانيته الحاليّة ومحاولة إعادة تشييدها أو تجديدّها بالطرق التقليدية المعروفة وإضافة إلى ذلك إن المظهر الكلي والذي ينتج عن هذا الدمج أو الامتداد أو التمديد قد يكون شاملاً لبناية واحدة أو أكثر أم في حالة التمديد والغير تقليدي أي الذي يتم بناءه بمواد بناء غير تقليدية ففي كل الأحوال فلا بد وأن تكون لها واجهة واحدة ومتناسقة شكلاً ولونا مع ما يحيط بها من بنايات وبيئة كما سبق وذكرنا آنفاً .



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16- Building Property and Location: Heights of Buildings

Background:

In traditional Arab-Islamic cities, we notice that the heights of buildings tend to be uniform. The reasons for this are:

- 1-Roof terraces are potential locations for people to overlook the private domains of adjacent neighbors. Thus the custom (*Urf*) was not to build appreciably higher than adjacent buildings.
- 2-Due to limitations of traditional construction methods and building materials, constructing a building higher than two or three stories was discouraged and in some cases was impractical. This was also the case in the heritage areas of Muharraq and Manama. With the availability of modern building materials and technologies, it is now possible to build very high buildings. Such open-ended freedom will destroy the heritage characteristics of both towns.

Implementation:

- 1-In both Muharraq and Manama it is necessary to undertake a study to establish the average height of traditional buildings in the area. That average can be established as a benchmark for building heights. Certain exceptions might be allowed on a case by case basis. For example, if the average height of a two story building and its terrace parapet is $3.5\text{m} + 3.5\text{m} + 1.5\text{m} + 1\text{m}$ (for the floor thicknesses) = 9.5 meters, then for exceptional cases a 10% or 15% additional height might be allowed. That will make the building height between 10.5m and 11meters.
- 2-It should be noted that the height of a building should be the primary measure and not the number of floors, as those can vary between 2.5m and 3.5m or higher. Thus the average allowable height of buildings may allow within their dimension up to three floors: 3 floors @ $2.5\text{m}/\text{floor} = 7.5\text{m} + 1.5\text{m}$ for the terrace parapet + 1.5 for the floor thicknesses = 10.5meters, which is within the average range for buildings with an allowable 10% increase in height.



THIS BIRD'S EYE VIEW SHOWS THAT BUILDING HEIGHTS RANGED BETWEEN ONE, TWO, AND OCCASSIONALLY A PARTIAL THIRD LEVEL WAS ADDED. THE LOCATION OF THIS AREA OF MUHARRAQ IS SHOWN ON THE MAP BESIDE. Drawing by John Yarwood, 1980s.

دليل ترميز التصميم الحضري والعمارة

16-الموقع وخصوصية المبنى ومميزاته : ارتفاعات المباني

الخلفية:

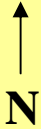
من المعروف والملاحظ أنه في المدن العربية الإسلامية التقليدية ، أن ارتفاعات المباني تميل إلى أن يكون متماثلة وتأخذ الإطار التقليدي المتناسق وقد يعود هذا إلى الأسباب التالية:

- 1- إن شرفات الأسقف والكائنة في المواقع والمباني اللازمة للناس والقائمة بشكل معين وجيد ومناسب لباقي المباني المجاورة. لذا فقد جرت العادة أن المباني تلك لا بد وأن تكون أعلى من المباني المجاورة.
- 2- بسبب التقيد بالقيود التي وضعت على طرق إنشاء المباني والمواد الإنشائية ، فإنه لا يتم تشجيع هذه المباني بأن تكون أعلى مما حولها وقد تكون في بعض الحالات كانت غير عملية. ويحدث هذا أيضا في المناطق الأثرية في المنامة والمحرق. بالإضافة إلى تواجد مواد البناء الحديثة والتقنيات الحديثة أيضا وأنه من الممكن في الظروف الحالية أن تشييد أو نبني بنايات شاهقة وحديثة . ومثل هذه الحرية الغير محدودة في البناء سحطت خصائص التراث في كلتا المدينتين.

التنفيذ :

- 1- إنه من الضروري واللازم أن نقوم بتركيز جهدا كبيرا لعمل الدراسات المستفيضة والمتخصصة لبناء المباني التقليدية والمتوسطة الارتفاعات في تلك المناطق. وهذه الارتفاعات وبذلك المعدل يمكن أن يؤسس علامات جديدة لارتفاعات المباني إلا أن هناك بعض الاستثناءات قد تُسمح لها على أساس كل حالة على حده وتبعاً لظروف الحالة. وعلى سبيل المثال ، إذا الارتفاع المتوسط للبناء وأن الحاجز أو المتراس للشرفات يكون لها الأبعاد التالية $1\text{ m} + 1.5\text{ m} + 3.5\text{ m} + 1\text{ m}$ (لسمك الأرضية) = 9.5 أمتار، ثم للحالات الاستثنائية 10% أو 15% هناك ارتفاع إضافي قد يُسمح له. الذي سيجعل ارتفاع البناء بين 10.5 m وإلى مائة متر.
- 2- يجب ملاحظة أن ارتفاع البناء يجب أن يكون من الإجراءات الأساسية وليس عدد الطوابق ، كما أنها يمكن أن تتفاوت بين 2.5 m و 3.5 m أو أعلى قليلاً. علماً بأن هذا الارتفاع الجائز والمتوسط المعين للمباني قد يُسمح للمالك حينئذٍ وضمن حقهم في البناء بحدود ثلاثة طوابق: ثلاثة طوابق في حدود ارتفاع الطابق الواحد 2.5 m / 7.5 m أو المتراس أو الحاجز الشرفة + 1.5 m لسمك الأرضية = 10.5 أمتار، والذي ضمن المدى المتوسط للمباني قد يسمح بزيادة قدرها 10% في الارتفاع.

2005 MAP



هذا المنظر الجوي يظهر ارتفاعات المباني تتراوح بين طابق أو طابقين وأحياناً ثلاثة، الطابق الثالث يضاف لاحقاً. موقع الرسم المجاور يظهر في المخطط الأعلى من مدينة المحرق ، ورسم من قبل جون ياور 1980s

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17- Building Property and Location: Location of Exterior Doors and Windows

Background:

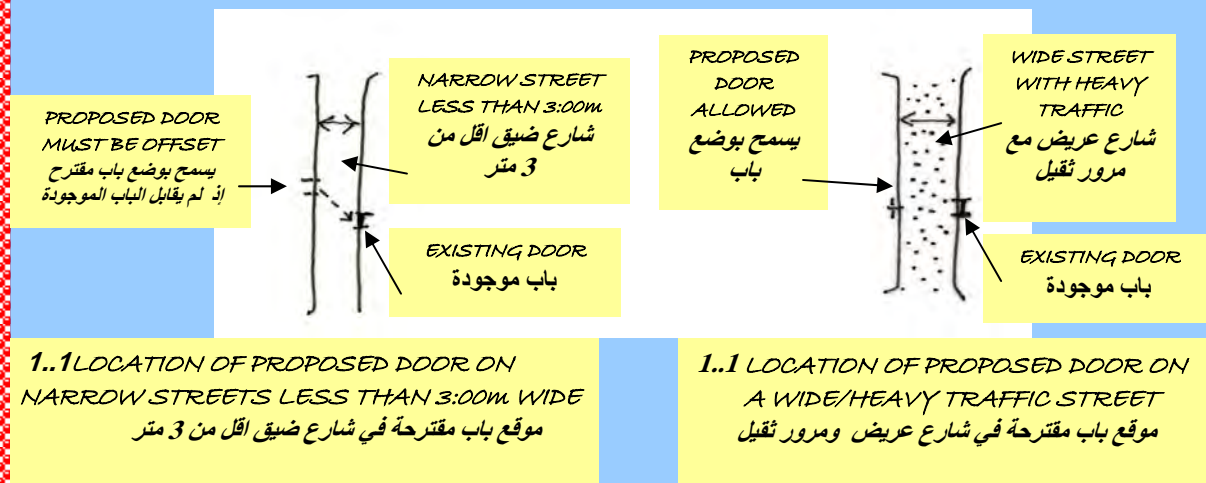
As a general rule doors and windows facing the public-right-of-way were traditionally viewed as either “old” or “recent”, as a result of the sequence of building events. Older doors and windows have a priority over more recent ones in terms of their right to continue as they are. This is related to the Ethical/Legal norm #4 “. . . to respect the rights of older established buildings”.

In other words the “recent” door or window has to adjust to the conditions of the “older” ones. It is difficult to determine accurately which buildings were built before others in the traditional fabric of Muharraq or Manama, however the principle can still be followed today. For example, if an owner of a house which is in a very bad state decides to tear it down and re-build it, he should respect the existing conditions of adjacent and opposite buildings in locating the exterior doors and window (s) of his proposed new building.

Implementation: The following rules should be followed for any changes to door locations:

1.1 - A door must not be located exactly opposite another door. It should be offset from it adequately to discourage looking into the entry hall of the opposite house. However, this stipulation might be relaxed if the street between opposite buildings is wider than usual and has a higher pedestrian activity than other streets in the vicinity. A door must not be located opposite a shop, or vice versa. They should be offset from each other so that direct overlooking will not be possible from the shop into the entry hall of the opposite house. However, this stipulation might be relaxed if the street between opposite buildings is wider than usual and has a higher pedestrian activity than other streets in the vicinity.

1.2 - On the same side of a street, a door must not be located adjacent to an existing neighbor's door without his consent. This is to avoid disrupting the *Fina* space on both sides of an existing door, in the event that such a *Fina* space was used by the neighbor. Examples for such uses include space for flower pots, unloading groceries, and temporary or emergency parking if cars are allowed in that area.



2. The following rules should be followed for any changes to window locations:

2.1 - The height of a window sill on the ground level for residential buildings, facing a street or a public area, is determined from the exterior, i.e. from the street. It should be approximately 1.75 meters from the surface of the street or public area. This dimension is above eye level of an average man. It can be less if the sightline from the window into the interior would pass above head level of a standing Person (s) inside.

دليل ترميز التصميم الحضري والعمارة

17-الموقع وخصوصية المبنى ومميزاته:

مواضع الأبواب الخارجية والنوافذ أو الشرفات

الخلفية:

من المعروف والملاحظ أنه في الوضع العام وكقاعدة عامة أن الأبواب والنوافذ في هذا الوضع التقليدي تُواجهان مراعاة الحق العام للطريق وللمارة وأيضاً مراعاة المنظر العام والتقليدي للبنىات سواء منها أكان " قديم " أو " حديثاً " ، كنتيجة حتمية وتتابعيه لسلسلة تشييد تلك البنىات أما الأبواب والنوافذ القديمة فلها الأولوية من الاهتمام والدراسة على تلك البنىات الأحدث أو تلك الأكثر حداثة من ناحية وكذلك حقهم للاستمرار في الحفاظ على هذا البناء. وهذا يتعلق بالقواعد والمعايير الشرعية والأخلاقية لاحترام حقوق البنىات المؤسسة والأقدم وكذلك الحفاظ على حقوق مالكيها على أن هناك ما يجب أخذه في الاعتبار وهو أن الأبواب أو النوافذ " وذلك في البنىات شيدت حديثة " أنه يجب أن يُعدّلاً إلى الشكل الذي يتناسب وشروط البنىات " التي بنيت قديماً ". غير أنه من الصعب التّقرير وبدقة أن أية بنىات قد بُنيت قبل الأخرى وذلك في النسيج التقليدي أو البنىات النمطية في منطقتي المحرق أو المنامة ، وعلى أية حال فإن المبدأ أن هذه البنىات يُمكن أن تظل قائمة كما هي على أنها من التراث الذي يمكن تتبعه اليوم .ومن أمثلة ذلك أيضاً وعلى سبيل المثال لا الحصر، أنه إذا هناك مالك بناية وهي في حالة سيئة جداً فإنه يُقرّر تدميرها وهدمها ثم إعادة بنائها ، أما المالك فيلتزم و يجب عليه أن يحترم الشروط الحالية للبنىات المجاورة والمقابلة والتي تحدد شكل ومكان الباب الخارجي وكذلك النوافذ للبنىات الجديدة والمُقرّر إنشائها.

التنفيذ :

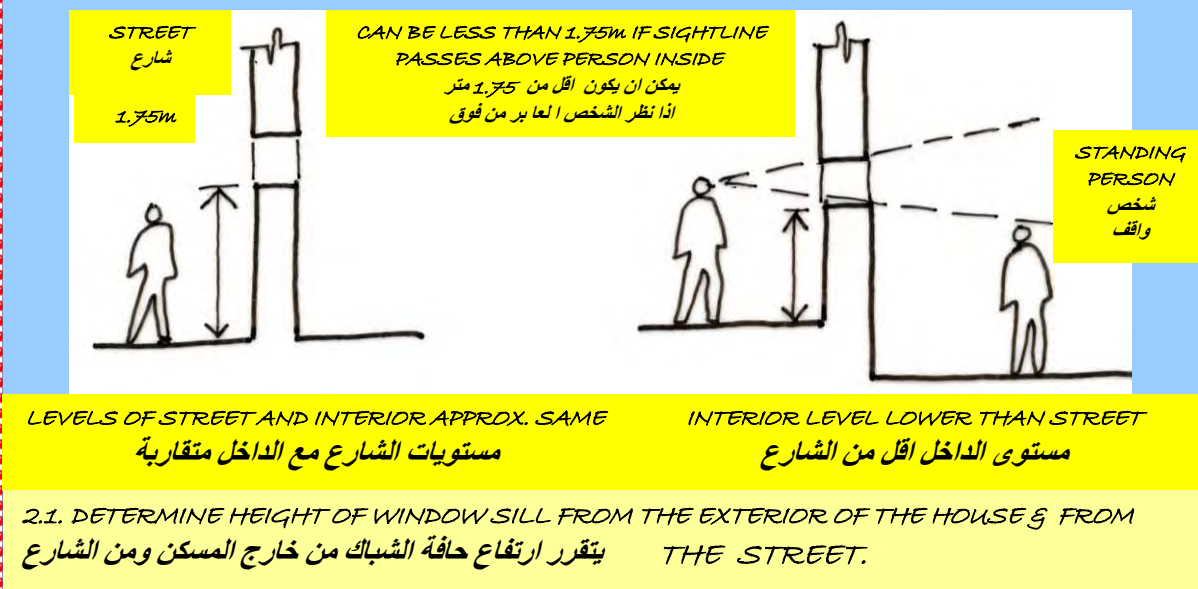
- 1- إن تلك القوانين الفعّالة والقواعد التي يجب إتباعها لتغيير مواقع الأبواب فإنها تتلخص في الآتي:
 - 1.1- إن الأبواب لابد من تكون موضوعة بشكل مقابل الأبواب الأخرى تماماً كما ينبغي أن ينبثق عنه أو يؤدي إلى الدخول إلى قاعة دخول البيت المقابل. وعلى أية حال ، فإن هذه الاشتراطات قد تختصر أو أن يتم تخفيفها في الحالات التي بها الشوارع المقابلة لتلك البنىات تكون أوسع منها في الحالات العادية ولها من مراعاة لحقوق للمشاة والمارة أكثر من تلك الشوارع الأخرى والتي على مقربة منها. أما الأبواب فيجب أن توضع في مقابل المحلات والعكس بالعكس. كما ينبغي لهم أي الأبواب والمحلات أن يُعوضوا بعضهم البعض لكي تبدو تلك المحلات على أن لن يكون من المحتمل أن تكون في المدخل أو تؤدي إلى المدخل إلى قاعة دخول البيت المعاكس. وعلى أية حال ، فإن هذه الاشتراطات قد تُختصر أو أن يتم تخفيفها في الحالات التي بها الشوارع المقابلة لتلك البنىات تكون أوسع منها في الحالات العادية ولها من مراعاة لحقوق للمشاة والمارة أكثر من تلك الشوارع الأخرى والتي على مقربة منها.
 - 2.1- وعلى نفس الجانب من الشارع ، فإنه لا يجب أن تكون الأبواب موضوعة في حالة متجاورة لأبواب البنىات المجاورة وبدون إذن وموافقة من مالكي تلك البنىات المجاورة وذلك لعدم إهدار مساحة الفناء التي على جانبي البابين المتواجدين وكذلك الحال لفناء البناية المجاورة نفسها وتضمن أمثلة عدم الإهدار تلك استعمالات الفضاء لفدور الزهور ، وكذلك فتح دكاكين أو محلات البقالة ، والاستخدام المؤقت لهذه الأفنية كمواقف مؤقتة أو طارئة للسيارات وأن يُسمح لها بدخول تلك الأفنية.



- 2- وهناك بعض القوانين الفعّالة والقواعد التي يجب إتباعها لتغيير مواقع النوافذ فإنها تتلخص في الآتي:
 - 1-2. إن ارتفاع عتبة النافذة أو الدريشة على المستوى الأرضي للبنىات السكنية ، والمواجهة للشارع أو المناطق العامة، والمُحدّدة من الخارج ، أو بمعنى آخر: أي من الشارع نفسه. وأن ارتفاع عتبة النافذة أو تلك يجب أن تكون تقريباً 1.75 متر من سطح الشارع أو المنطقة العامة على أن يكون هذا الارتفاع على مرمى بصر الإنسان العادي. وهذا الارتفاع يُمكن أن يكون أقل إذا كان السائر بالشارع يرى ما بالداخل من خلال النافذة وهذا يؤدي إلى تجريح أهل البيت بالداخل أي لابد وأن يكون فوق مستوى رأس الشخص الواقف

This condition would occur when the interior floor level is appreciably lower than the outside street level. Therefore as a general rule, ground level windows on exterior walls facing streets should be designed for the purposes of ventilation and light. Measures for security should also be kept in mind for the design of such windows.

2.2. Windows on upper levels (i.e. first and second floors that are above the ground level) facing streets or other public areas have no restriction on their size and sill height above the street. However, their location should be influenced by existing windows on the other side of the street. The proper thing to do is to offset, i.e. set them aside, but this is not as critical as the case with doors discussed above, because exterior windows were traditionally covered by a wooden lattice to prevent visual penetration. This treatment is commonly termed *Mashrabiya*, and its use should be encouraged. The specific design should be influenced by traditional models found in Muharraq and Manama.



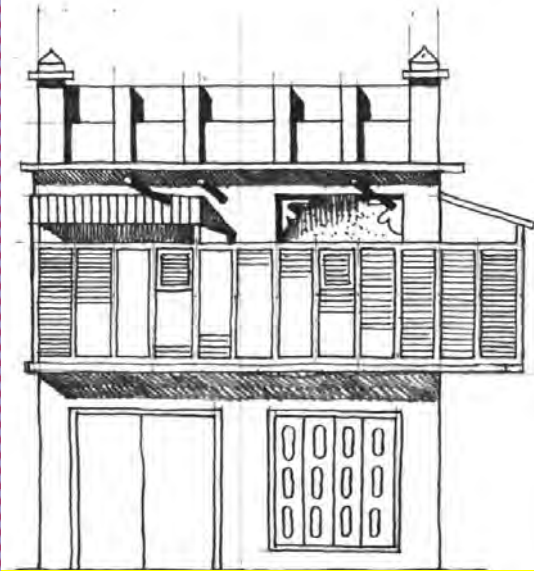
3- Location of windows facing the interior courtyard or garden:

3.1- There are no restrictions for the location and size of ground level windows that face a courtyard or garden. Any constraints will be due to other design requirements.

3.2- Upper level windows, whether or not they face an interior courtyard or garden, must not be located so they would provide direct visual penetration of an adjacent neighbor's courtyard or garden.

ويعتبر هذا الشرط أنه يحدّد حتى مستوى الأرضية الداخلية بحيث أنها لا بد وأن تنخفض عن ذلك المستوى الخارجي أي مستوى الشارع. لذا نأخذ هذا الشرط كقاعدة عامة ، وهو أن نوافذ المستوية والأرضية على الحيطان أو الجدران الخارجية تُواجه الشوارع يجب وأن تُصمّم لأغراض التهوية والضوء ويعتبر هذا ضمن الإجراءات الأمنية وهو أنه يجب أيضاً أن يُذكر مثل في تصميم البناء الخاصة بالبنائيات مثل هذه النوافذ

2-2. هذه النوافذ على المستويات العليا (وبمعنى آخر: أي الطابق الأول والطوابق الثانية والتي فوق الطابق الأرضي والمواجهة للشارع أو في المناطق العامة أو الشعبية والتي ليس بها أية قيود سواء على ارتفاع أو حجم العتبة والسابق ذكره أنفاً وعلى أية حال ، فإن موقع هذه الطوابق يجب أن يتأثر بإيجاد النوافذ على الجانب الآخر للشارع. إن الشيء المناسب والصحيح لأن يُعادل أو يعوض ذلك ، أو بمعنى آخر: أن ذلك نضجُه جانباً ، لكن هذه ليست بوضع حرج كما هو الحال بالأبواب والتي نوقشت سابقاً ، لأن النوافذ الخارجية لا بد وأن تكون تقليدية كما ذكرنا من قبل ومغطى بشيش خشبي لمنع الاختراق البصري وعدم رؤية ما بالداخل. وتعتبر هذه المعالجة والتي نسميها بالمشربية حيث نشجع على استخدامها كما هي معروفة وتقليدية بمنطقة المحرق. وهذه التصميمات تتأثر إلى حد كبير بالنماذج التقليدية الموجودة والكائنة بمنطقة المحرق والمنامة.



2.2 - BUILDING IN SHEIKH ISA ROAD IN MUHARRAQ SHOWING USE OF MASHRABIYA WRAPPING AROUND TWO SIDES OF BUILDING

DRAWING BY JOHN YARWOOD, 1980s
بنائية في طريق الشيخ عيسى تظهر استعمال المشربيات وملقفة حول البناية من الجهتين



2.2 - AN EXAMPLE FROM MANAMA. ALSO SHOWING THE CHAMFERED CORNER AT THE JUNCTION OF TWO STREETS, 2006.

مثال من المنامة ايضاً يظهر المجلس او المشربية في زاوية المبنى وعلى شارعين 2006.

3- إن موقع تلك النوافذ يُواجه الفناء أو الحديقة الداخلية حيث:

1.3 ليس هناك قيود للموقع ولا حجم النوافذ المستوية الأرضية والتي تواجه الفناء أو الحديقة وأن أي قيود ستكون سبباً لمتطلبات تصاميم أخرى.

2.3 إن النوافذ المستوية العليا ، سواء تواجه أو لا تواجه فناءً أو حديقة داخلية ، لا يجب أن يُحدّد مكان لهم لأنهم بعيدون عن الاختراق البصري المباشر حيث تطل هذه النوافذ على الفناء أو الحديقة المجاورة دون تجريح للجار.

Manual of Urban Design, Architecture

18- Building Property and Location: **Design and Construction of Party Walls and Abutting an Existing Wall**

Background:

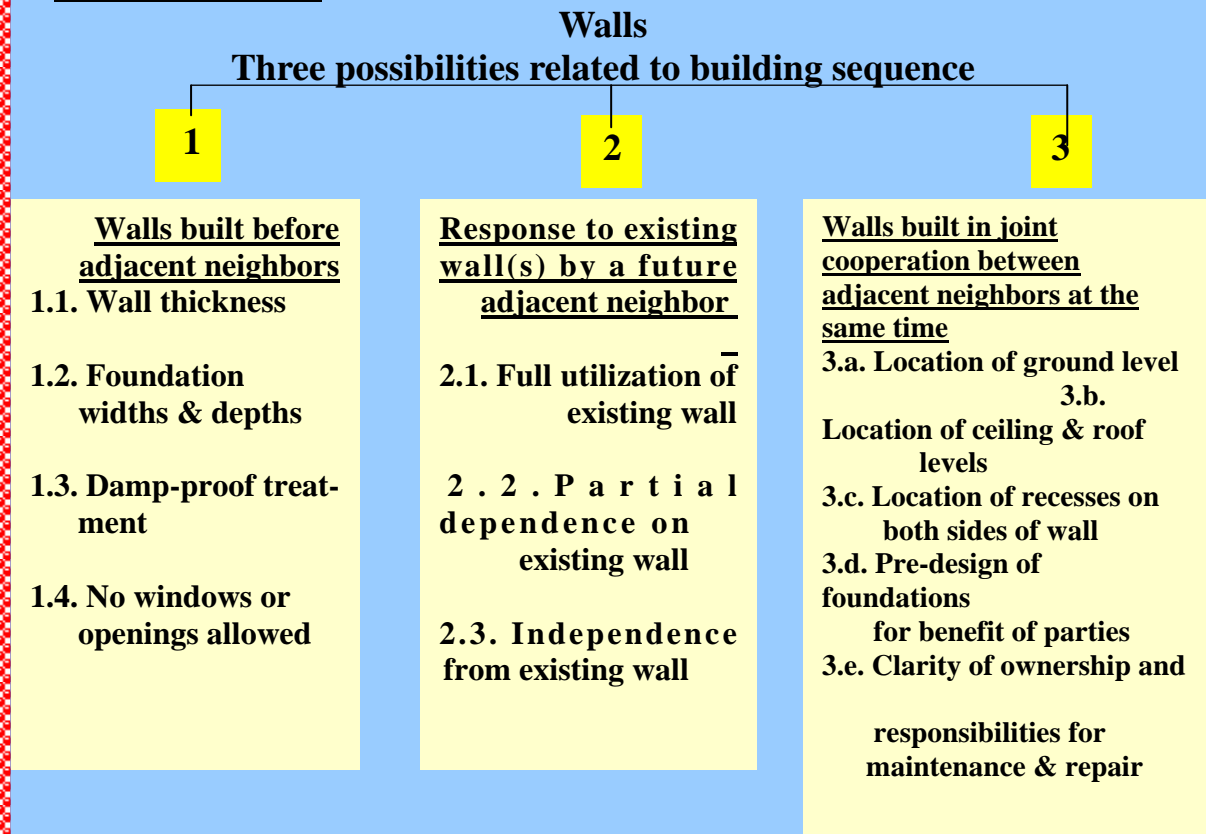
In clustered and compact housing – such as the type used in traditional Arab-Islamic cities including the heritage areas of Muharraq and Manama – the role, treatment, and use of walls between adjacent neighbors is an important issue. In traditional situations – due to the longevity of houses on the same site, rebuilt over since their inception – we find that major problems which created conflict between adjunct neighbors were related to the ownership verification of party walls, and, when ownership is known, the rights and responsibilities of the neighbor (s) when the wall is owned by one, or when it is jointly owned by both.

A simple approach is needed that is based on the following principles derived from considerations of

One of three possibilities related to the initial sequence of building events:

- (a) Wall(s) of a house are built by one owner when adjacent properties are still vacant.
- (b) Response to existing wall(s) by a neighbor who builds next to a house at a later date.
- (c) Wall(s) are built in joint cooperation between adjacent neighbors at the same time.

Implementation:



دليل ترميز التصميم الحضري والعمارة

18-الموقع وخصوصية المبنى ومميزاته:

التصميم وبناء الجدران المشتركة المتأخمان حالياً

الخلفية:

من المعروف والملاحظ أنه في الوضع العام وكقاعدة عامة أن الأبواب والنوافذ (الداريش) في هذا الوضع في المناطق السكنية أو التجمعات - مثل النوع الذي استعمل في المدن العربية الإسلامية التقليدية والتي تضم المناطق الأثرية وأماكن التراث كما في منطقتي المحرق والمنامة - حيث أن الدور، والمعالجة ، ومسألة الجدران التي بين الجيران تعتبر قضية مهمة جداً. وفي الحالات التقليدية - وبسبب قدم عمر البيوت على نفس الموقع أي المدة الزمنية التي مرت على بنائها ، أو تلك التي أعيد بنائها منذ مدة زمنية طويلة - فإننا قد نجد أن تلك المشاكل الرئيسية التي خلقت النزاع بين الجيران هي في أساسها تتعلق بملكية الجدران المشتركة ، ومتى ما تكون الملكية معروفة الحقوق ومسؤوليات الجار تجاه جاره أو عندما يكون الحائط مُمثلًا لصاحب واحد وليس بجدار مشترك نجد أن المشاكل تلك قد انتهت أو على الأقل قد تضاءلت.

أي نظرة بسيطة والتي تتم على أساس مشتق من أسس مستندة على المبادئ والاعتبارات التالية:

- (1) إن حائط أو جدار البيت والذي يَبني من قِبَل احد المالكين ولها حق الملكيات المجاورة والتي ما زالت شاغرة.
- (2) الاستجابة لذلك ونتيجة بناء الحائط الحالي من قِبَل الجار الذي يَبني حائطاً بجانب بيت أو بناية الجار في موعد لاحق.
- (3) الحوائط التي تَبني بالتعاون المشترك بين الجيران المتجاورة البناء والمتزامنة في نفس الوقت.

التنفيذ :

الجدران

ثلاث إمكانيات تَعَلَّقتُ ببناء سلسلة من البنايات المتجاورة

1

1- الجدران التي بنيت قبل غيرها من جدران الجيران.

- 1- أولاً سمك الجدار.
- 2- اتساع وعمق الأساس.
- 3- معالجة رطوبة الأسطح.
- 4- عدم السماح بأيّة فتحات.

2

2- الاستجابة إلى الحائط الحالي من قِبَل الجار المجاور وفي فترة لاحقة مستقبلية.

- 1- الاستخدام الكامل لإيجاد الحائط.
- 2- الاعتماد المؤقت على الجدار الموجود والذي بني من قبل أحد الجيران.
- 3- عدم الاعتماد على الجدار الموجود والذي بني من قبل أحد الجيران.

3

3- بناء الحيطان أو الجدران بالتعاون بين الجيران المجاورة في نفس الوقت.

- 1 - مكان أو موقع الأرضي .
- 2- مكان أو موقع الأسقف والأسطح وارتفاعاتها.
- 3- ولصالح الجارين يجب أن يكون موقع الاستراحة على كلا الجانبين من الحائط وان يوضع قَبْلَ تصميم الأساس لمنفعة الطرفين.
- 4- لا بد من وضوح الملكية والمسؤوليات لموقع التصليح وصيانة الاستراحة على كلا الجانبين من الحائط وقَبْلَ تصميم الأساس لمنفعة الطرفين. كالآتي :

1- Principles related to wall(s) of a house built before adjacent houses: Consideration should be given to future adjacent houses, according to the following rules:

- 1.1 Wall thicknesses should be approximately .45cm to .60cm, built of solid materials. This would provide the necessary sound insulation as well as adequate support for ceilings and roofs.
- 1.2. Foundation widths and depths should be, if possible, responsive to potential requirements of future adjacent building decisions.
- 1.3. Damp-proof prevention should be protective of the building regardless of unexpected adjacent building decisions.
- 1.4. No windows or similar openings are allowed for the ground and first (second) levels of the wall. It might be possible to have a window or small light/ventilation opening on the third level, provided its sill is at least 2.50m above the floor of the room.
- 1.5. It is possible done, the narrowing should occur on the outside face of the walls, i.e. towards the future neighbor to narrow the thickness of the wall for the first (second) and/or third levels. If this is , so that he (the future neighbor) might be able to make sound decisions regarding his construction activities.

2- Principles related to the response to existing wall(s) by a future adjacent neighbor:

The future neighbor has certain responsibilities and obligations for the use of an adjacent existing wall. If necessary, he should undertake adequate consultation with the earlier existing neighbor who owns the wall(s) to ensure that his construction decisions will not create damages to the integrity and stability of the existing wall(s).

2.1. Total dependence and utilization of the existing wall. The following rules should be observed:

- (a) The ceiling and roof support beams can be inserted in the wall. They should be higher than the level of existing beams of the ceiling or roof of the existing house. An agreement for this use should be formalized with the wall's owner.
- (b) No wall recesses, i.e. built-in recess for shelving or storage, are allowed to be made into the existing wall.
- (c) Pointing or plastering followed by painting should be allowed by the wall's owner.
- (d) The title and ownership of the wall will, in usual circumstances, remain with the original owner. However, it might be possible to work out a partial or joint ownership agreement in return for a compensation worked out by the parties in writing and sanctioned by the *Muhakkim* and endorsed by the local court.

2.2. Partial dependence on the existing wall as a barrier, supplemented with a new system for structural support. The following rules should be observed:

- (a) A column and beam system can be built adjacent to the existing wall to carry the ceiling and roof beams or other type of structure, to achieve the same purpose, may be used. Careful attention to the foundations should be given so that they would not inflict any damage to the foundations of the existing wall. The surface of the existing wall may be improved to serve as a finish by pointing, plastering, and/or painting. Except for normal occasional nails for hanging pictures and other such items, no other constructional or structural use should be made of the existing wall.

1- إن الأسس المتعلقة بالحائط والخاصة بالبنائية أو البيت لابد وان تبنى قبل البيوت والبنائيات المجاورة: يجب الأخذ في الاعتبار أن تُعطي إلى البيوت المجاورة والتي ستبنى مستقبلياً ، وذلك طبقاً للقواعد التالية:

1.1. يجب أن يكون سُمْك الحائط أو الجدار تقريباً 45 سنتيمتر إلى 60 سنتيمتر ، وأن يبنى من المواد الصلبة. وهذا يُزوّد العزل الصحيح والضروري بالإضافة إلى الدعم الكافي للأسقف والأسطح..

2.1. إنه ينبغي أن يكون عرض وعمق الأساسات ، إذا كان بالإمكان ، أن تتناسب مع المتطلبات المحتملة مع تصميمات البنائيات المجاورة والتي يتم بناءها في المستقبل.

3.1. يجب محاولة منع الرطوبة من البناية بغض النظر عن تصميمات البنائيات المجاورة والغير متوقعة.

4.1. لا يَسْمَح بأية نوافذ أو فتحات ماثلة في الطابق الأرضي والطابق الأول وكذلك الطابق الثاني غير انه من الممكن أن تكون هناك فتحات للتهوية والضوء ، ولربما يكون من الممكن أن يَكُون هنالك اتفاق عِنْدَهُ تَفْتَحُ في الطوابق الثلاثة (الأرضي والأول والثاني) ، والتي زوّدَت عتبئها على الأقل 2.50 m فوق أرضية الغرفة.

5.1. إنه ومن المحتمل لتقليل سُمْك الحائط أو الجدار للطابق الأول وكذلك الثاني وأيضا الطابق الثالث وإذا حدث هذا فإن هذا التقليل في السمك ، إنه يجب أن يَحْدَثَ على واجهة الجدران ، وبمعنى آخر: تجاه جدران الجار والتي يتم بنائها في المستقبل ، ولكي يكون هو اى (الجار المستقبلي) والذي قد يَكُونُ قادرا على تقرير البناء بخصوص بنائه بنيته أو بيته.

2.- إن الأسس التي تتعلّق بالاستجابة إلى بناء الحائط الحالي من قبل أحد الجيران والمجاور للجار المستقبلي والذي يتم بناء بنيته في المستقبل : الجار المستقبلي والذي تتحقق لديه ويكون عِنْدَهُ بَعْضُ المسؤوليات والالتزامات تجاه الاستعمال الحائط المجاور. وإذا دعت الضرورة فإنه ينبغي على الجار الأحدث أن يستشير وأن يأخذ برأي الجار الأقدم بشأن الجدار المقام مسبقا ومن قبل الجار الأقدم في بناء حائطه وان يتأكد أن قرارات البناء لا تسبب أضرارا للجار الأحدث حتى تكتمل وتستقر الجدران القائمة.

1.2. إن الجدران المقامة والانتفاع بالحائط الحالي لابد وان تتبع القواعد التالية يجب أن تلاحظ:

(أ) لابد من أن يَدْعُمُ الأسقف والأسطح طريق دعامات يُمكنُ أن تُدْخَلَ بداخل الجدار. وهذه الدعامات يجب أن تكون على مستويات أعلى من مستوى تلك الدعامات والخاصة بالأسقف أو الأسطح والخاصة بالبيت أو البناية الحالية وهذا كله لابد وان كون بالاتفاق مع مالك الحائط.

(ب) لا يوجد أية تجويفات بالجدار ، وبمعنى آخر: أن المونة الداخلية أو الحشو يتم تجهيزه وبصفة خاصة للجدار الحالي .

(ج) إن موضع التخصيص والذي يليه الطلاء والدهانات يجب أن تُسَمَحَ لها من قبل مالك الحائط .

(د) إن عنوان وملكية الحائط سيَتَقَيَان ، وفي الظروف العادية ، من أحقية المالك الأصلي للجدار. وعلى أية حال ، لربما يكون من الممكن عقد اتفاقية الملكية المشتركة مقابل تعويض يتم باتفاق الأطراف وذلك بإقرار كتابي ومسجل في المحكمة المحلية.

2.2. يعتبر الاعتماد الجزئي على الحائط الحالي مانع أو حاجز ، ومكمل للنظام الجديد لتدعيم الهيكل . وفي هذه الحالة يجب إتباع القواعد التالية:

(أ) أي نظام للتدعيم يُمكنُ أن يُبْنَى للحائط المجاور الحالي لحمل الأسقف والأسطح أو النوع الآخر من التركيب أو التشييد ، لإنجاز نفس الغرض ، والذي قد يُسْتَعْمَلُ كبديل لتلك الدعائم. وهذا يعتبر أساس يجب أن يتبع حتى لا يحدث أي ضرر للأساس الموجود للجدار الكائن . علما بأن سطح الحائط الحالي قد يُتَمَّ تطويره وتحسينه وذلك بعملية التخصيص أو الطلاء. وفيما عدا الظروف العادية فإن المسامير وتعليق الصور وما شابه ذلك فإنه لا توجد أية مواد أو تركيبات يمكن أن تضاف للحائط الكائن الحالي.

- (b) When locating the ground floor level of the new house, careful attention should be given to the level of the existing damp-proof treatment so that: (i) it is appropriately utilized for the benefit of the new house, and (ii) damage to the existing house is avoided due, for instance, to the raising of the ground level of the new house above the existing damp-proof course. Similar considerations must be applied to the roof and its junctions with the existing wall.

2.3. Independence from the existing wall by building another adjacent wall. Two approaches and their rules are:

- (a) Building a new wall separated from the existing wall by an adequate cavity (which should be about .30cm to .45cm wide), so that it will act as an independent structural entity. The cavity can be filled with earth or sand or with an appropriate insulating material as the wall is being erected. Careful attention should be given at the foundation levels of the existing and new wall.
- (b) Build a new thin wall (about .25cm thick) adjacent to the existing wall, supported by a cantilevered type of foundation footing. The benefit of this approach is that the new thin wall will be partly supported by the existing wall, enabling it to take structural thrusts from the ceiling and roof, because structural distribution of forces will be shared by both walls.

In this approach two important aspects should be carefully addressed:

(i) the treatment of the foundations, and (ii) the ground floor level and its junction with the damp-proof treatment in the existing and new wall. In this type of solution maximum freedom is achieved due to choices in:

(i) the location of ceiling and roof levels, (ii) the creation of recesses in the wall for built-in bookshelves and storage space, and (iii) choices for the finishing of the new wall.

3- Principles related to wall(s) that are built in joint cooperation between adjacent neighbors at the same time: This situation assumes that two or more adjacent neighbors decide to build their houses at the same time. The **Muhakkim** should encourage cooperation between such neighbors so that they can work out, with his help, the design and potential of using common walls jointly. This also implies that the cost of these jointly built walls be equitably divided. The following design rules should be followed for the benefit of all parties:

- (a) Location of the ground level(s).
- (b) Location of ceiling and roof level(s).
- (c) Location of recesses for built-in shelves, storage, etc. on both sides of the wall, so that they do not occur at the same level weakening the wall.
- (d) The pre-design of the foundations to accommodate the joint requirements of the walls being built will create savings in their cost for all parties.
- (e) Cooperation between all parties concerned will establish clarity for the ownership of the wall(s) and the responsibilities of each party for maintenance and repair when needed.

(ب) عندما يتم تحديد موقع أو مكان مستوى الطابق الأرضي من البيت الجديد ، فإن هناك انتباه وتحذير يجب أن يُعطى إلى مستوى المعالجة ضد الرطوبة الحالية لكي:

- (1) يُستعمل بشكل ملائم لمنفعة البيت الجديد.
- (2) لا بد من أن يتم تفادي الضرر الذي قد يقع على البناية أو البيت الحالي ، فعلى سبيل المثال ، رفع المستوى الأرضي للبيت الجديد فوق طبقة العزل وضد الرطوبة الحالية للأسقف. وبالمثل فإن هذا ينبغي أن ينطبق أيضا على الأسطح والفواصل الموجودة في الجدار.

3.2 . لا بد من عدم الاعتماد على الحائط الحالي والمتواجد وذلك لبناء حائط البناء الآخر المجاور. ولذا فيوجد لدينا قاعدتين هامتين يجب أخذهما في الاعتبار وهما:

(أ) يجب بناء حائط البناية الجديدة بحيث يكون هناك فاصل بينه وبين الحائط الحالي من بتجويف كافي (والذي يجب أن يكون سمكه يصل إلى 30 سنتيمتر أما عرضة فيصل إلى 45 سنتيمتر) ، ولذا فإن هذا التصرف سيكون كائن هيكلي مستقل حيث أن الحائط يتم ملأه إما بالتراب أو الرمال أو بمواد عازلة مناسبة كالحوائط الحاملة كما أنه يجب الأخذ في الاعتبار أن الأساسات التي يتم بنائها لا بد وأن تكون طبقا للجدارين القديم والجديد.

(ب) إن بناء حائط رقيق جديد (حوالي 25 سنتيمتر سمكا) وبجوار الحائط القائم والحالي ، والمدعم بواسطة مواد بناء عازلة معينة. إن النفع الذي يعود على التصميمات والتي تحتوي على الحائط الرقيق الجديد سيكون جزئيا مدعما من قبل الحائط الحالي ، ويُمكنه أن يأخذ دفعات الهيكلية مسلحة من الأسقف والأسطح ، لأن التوزيع الهيكلي هذا يقوى ويدعم الحوائط والجدران المشتركة. وفي هذا الاتجاه فإنه يجب أن نتعامل بعناية مع شقين رئيسيين وهما:

(أ) معالجة الأساسات

(أ) معالجة الرطوبة للأسقف والطوابق الأرضية والفواصل التي بينها وبين الحوائط الجديدة وفي هذا الإطار فإن هناك أقصى حد من الحرية يمكن الوصول إليه في وجود الاختيار في الآتي:

- (1) مواقع الأسطح والأسقف.
- (2) اختيار الفتحات في الجدران وبناء مصبات جديدة وأماكن تخزين .
- (3) وجود اختيارات لإنهاء بناء الجدار الجديد.

3- تعلقت هذه الأسس بالجدران التي تُبنى بالتعاون المشترك بين الجيران المتجاورة والتي تم بناءه في نفس الوقت أي متزامنة البناء: بمعنى أن هناك اثنان من الجيران قد قررا بناء بنايتهما معا وفي نفس الوقت. وتشجع المحاكم على هذا التعاون بين الجيران لكي يستطيعوا إنجاز مثل ذلك العمل , وفي ضوء التعاون بينهما , والمتمثل في عمل التصميمات وبناء الجدران المشتركة بينهما كما يطبق هذا أيضا على التعاون في التكاليف المشتركة والمساهمة بينهما في ذلك وتقسيمها بينهما بالتساوي . وهناك القواعد الأساسية والتي ينبغي أن نتبعها من أجل مصلحة الطرفين في نفس الوقت وهي :

(أ) موقع الطابق الأرضي والطوابق الأخرى

(ب) موقع الأسقف والأسطح .

(ج) موقع الفتحات أو الفجوات للأرفف الداخلية، والمخزن ، والى ما شابه ذلك وعلى كلا الجانبين من الحائط ، وذلك من أجل عدم إضعاف أو التأثير على الحائط .

(د) إن التصميمات المسبقة للأساسات والمتفقة والمناسبة للمتطلبات الخاصة بذلك الجدار والتي تؤدي بدورها إلى تخفيض النفقات على الجارين في نفس الوقت.

(هـ) إن التعاون المشترك بين الطرفين وبالمعنى الذي سيؤسس وضوح لملكية الحائط أو الحوائط ومسؤوليات كل منهما في أعمال الصيانة والتصليح عندما يتطلب الوضع ذلك أو أن تكون مطلوبة هناك صيانات دورية متفق عليها.

Manual of Urban Design and Architecture

19- Building Property and Location:

Background:

Most traditional buildings and/or perimeter boundary walls were constructed on the property without set backs. Thus, the focus of the house was away from the street towards the interior courtyard. This courtyard served as circulation space as well as the main source of ventilation. The arrangement of the rooms was along the property edge, thus creating a large usable space, unlike today's villas which are placed in the middle of the property with set-backs all around which results in narrow strips of useless spaces along the edges.

The courtyard house is also more economical than the villa type in terms of materials: the exterior walls of the courtyard type act as the boundary walls themselves, unlike the villa type where the owner must build not only the house but all the boundary walls as well.



Implementation: Set Backs:

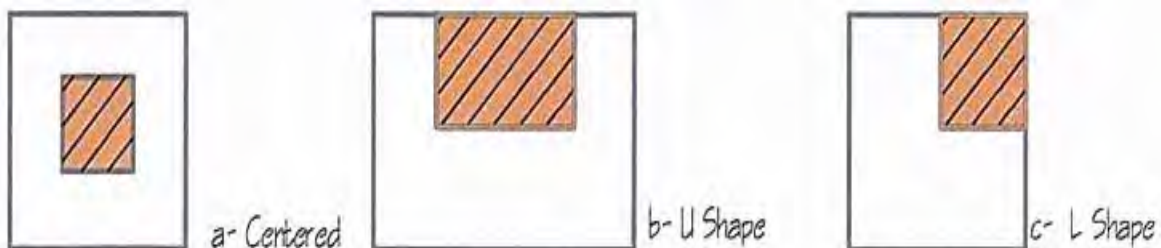
1- Buildings and their perimeter walls must be constructed along the edges of the property lines, no setbacks for either the house or the boundary walls are permitted.

2- The facades of the building that face the courtyard are not considered as setbacks since the boundary wall encloses the space instead of the building.

Implementation: Courtyards:

Traditionally the percentage of space occupied by the courtyard was between 20% and 50% of the property, with a combination of the building and the boundary wall enclosing it. This percentage is recommended due to the requirements of light and ventilation of the rooms. Courtyards can take a variety of forms resulting out of the building's shape:

- The building takes up the entire property; the courtyard is centered within the building.
- The building is U-shaped, leaving a square courtyard between the three building edges and the boundary wall.
- The building is L-shaped, creating a square courtyard in a corner bounded on two sides by the building and on two sides by the boundary wall. Courtyards are easily adaptable, especially when two smaller properties are consolidated into one.



SOURCE FOR TEXT AND DRAWINGS: General Directorate of Urban Planning
مصدر الكتابة والرسوم من مديرية التخطيط الحضري

دليل ترميز التصميم الحضري والعمارة

19-الموقع وخصوصية المبنى ومميزاته:

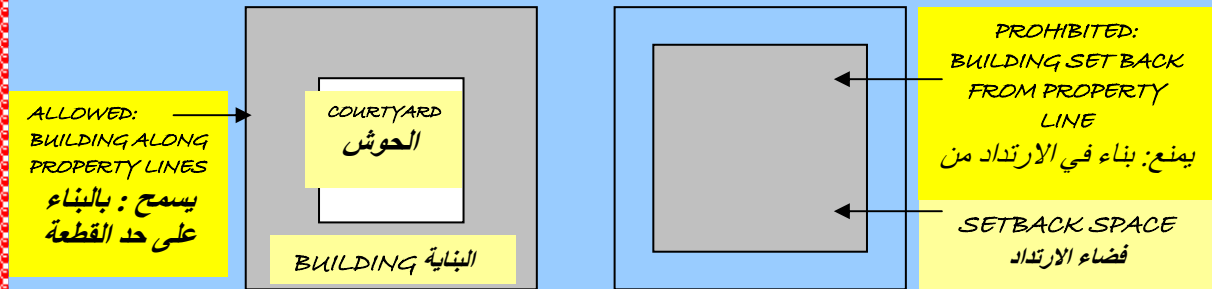
الارتداد والأفنية

الخلفية:

أكثر البنايات التقليدية و/ أو جدرانها والتي تحيط بها والمقامة على حدود البنايتين للجارين المتجاورين وبدون حدوث عملية الارتداد تلك وهكذا ، حتى أن فتحات أو خصوصيات المنزل أو البيت تكون بعيداً عن تجريح الشارع وفي اتجاه الفناء الداخلي حيث أن هذا الفناء يعمل كفضاء لتجديد الهواء والتهوية وكمصدر الرئيسي هواء النقي. إن ترتيب وتوزيع الغرف كان على طول حافة الملكية ، هكذا يخلق فضاء كبير صالح للاستعمال كفناء ، على خلاف فيلات اليوم والتي تكون مشيدة وموضوعة في منتصف لأرض أو الملكية مما يؤدي إلى ظهور مجموعة من الفراغات الشاملة والتي تؤدي إلى الأشرطة الضيقة من الفراغات العديدة الفاندة على طول الحواف لتلك الفيلات. إن بناء هذه البنايات بالشكل الذي أوضح يكون مفيداً إلى حد كبير وخاصة من الناحية الاقتصادية فضلاً عن الفيلا وذلك بالنسبة لمواد البناء: حيث أن الحيطان أو الجدران الخارجية وأيضا تلك الأفنية تعمل كحوائط وتمثل هي نفسها الحد الفاصل للبنائية ، على خلاف تلك الفيلا حيث المالك يجب أن يبني ليس فقط البيت ولكن كل جدار على حده أيضاً.

التنفيذ:

- 1- إن يجب أن تُبنى تلك البنايات والجدران أو الحوائط على طول حافات الملكية ، لا ارتداد لأياً من المنزلين أو الحوائط وبالحدّ المسموح به وما يحيط بها وبالطبع تلك البنايات يجب وأن تشيد على طول تلك الحواف وحدود الملكية سواء للمنزل أو المنطقة المحيطة به.
- 2- إن واجهات البنايات التي تواجه الفناء لم تُعتبر كنكسات أو كنوع من الارتداد وكحدّ الفضاء الفاصل بدلاً من البناية .



التطبيق: الفناءات:

- وهي تقليدية حيث النسبة المئوية من الفضاء والمساحة التي تم شغلها بالفناء كانت بين 20 % و 50 % الملكية ، من مساحة البناية والحائط أو الجدار الذي يرافقها ويحتويه وتعتبر هذه النسبة بمثابة توصيات للمتطلبات الضرورية واللازمة للإضاءة والتهوية الخاصة بالغرف .
- وإن المتعارف عليه أن تلك الأفنية تأخذ أشكالاً مختلفة والتي نبع أصلاً من الشكل الذي تأخذه البنايات .
- فقد تأخذ البناية أشكالاً للملكي بالكامل والفناء يكون بالمركز أو بواسطة .
 - أو أن يكون البناء متخذاً شكل حرف اليوم ثم الفناء في منتصفه وعلى حواف البناية.
 - أو أن البناية تأخذ شكل حرف (L) مما ينتج عنه فناء على شكل مربع في أحد الأركان ومحاط بجانبين من المبنى وكذلك جانبين من الجدران المحيطة.



SOURCE FOR TEXT AND DRAWINGS: General Directorate of Urban Planning

مصدر الكتابة والرسوم من مديرية التخطيط الحضري



Courtyard house types form the basis of the urban plan in the traditional areas of Muharraq and Manama. In order to repair the urban fabric, this traditional building type should continue to be the basis of construction in these areas. This type of building is the most efficient in terms of useable land, and forms the tight-knit urban fabric that is human scale. This building form aids in the development of a cohesive neighborhood, not only in terms of the built form but in human interaction as well.



*COURTYARD HOUSES CREATE THE TRADITIONAL
URBAN FABRIC IN MUHARRAQ*

ويجب لنا أن نعلم بأن تلك الفناءات تتكيف وتتأقلم بسهولة ، خصوصاً عندما تلتأم ملكيتان صغيرتان وتتوحدا في واحدة فقط وفي أغلب الأحيان ، أن المالك يمكن له أن يشتري ملكية جاره لكي يزيد من مساحة منزله أو من حجم بيته وان يقوم برَبْط الفناءات معا ، هذا التوسّع يتم تنفيذه بسهولة بدون تغييرات رئيسية في التصميمات والرسومات الخاصة بالبنائات نفسها ومن أمثلة ذلك الامتداد الذي لم يكن ممكنا في حالة الفيلات.

- إن الفناءات مفيدة من الناحية البيئية حيث يَسْمَحونَ للأشجار الكبيرة للنُّمُو، حيث يمد الفناء والبيت ويُرَوِّدُهُ بِالظِّلِّ، وهكذا يُخَفِّضُ التكاليف وبالإضافة إلى ذلك تحسين الهواء وتنقيته وأيضا لخدمة وتحسين المظهر العام ومظهر للشارع أي مما يزيد من جمال المظهر العام للبيئة والحي المحيط بها كما أنها تُشكِّلُ أنواعَ من السمات الحضرية والأثرية في المناطق التقليدية للمحرق والمنامة ولكي يُصْلَحَ النسيج الحضري ، وهذا النوع من البنائات التقليدية كما يَجِبُ أَنْ يَسْتَمِرَّ إِلَى أَنْ يَكُونَ قَاعِدَةً للبناء في هذه المناطق هذا النوع مِنْ البناية الأكثر كفاءة من ناحية الأرض ، ويُشكِّلُ النسيج الحضري المتماسك الذي هو مقياسُ إنساني. ويُساعدُ هذا الشكل للبنائية في تطوير الحيّ وان يكون متماسك ، ليس فقط من ناحية الشكل ولكن أيضا في التفاعل الإنساني أيضاً.



حواش المساكن تنشأ النسيج التقليدي في مدينة المحرق

Manual of Urban Design and Architecture

20- Building Elements: Balconies

Background:

Balconies are a traditional element of facades; they help enliven the appearance of the building through its three-dimensionality, as well as having a practical use as a shaded, visually protected external sitting or play area. On many traditional buildings, these balconies have fallen into disuse, disrepair or have been demolished. Often, the only evidence of their former existence is timber beams projecting from the façade. On new buildings, balconies are often provided, but the design is of an inappropriate style, offers no visual protection, and is primarily used as places to dry laundry, thus spoiling the visual appearance of the buildings.



Implementation:

1- It is to be encouraged to repair existing balconies, and to replace them where they have been removed. In the case of traditional buildings, any existing balconies should be repaired in accordance with the original design and materials. Care should be taken that the materials are sound and that the supporting beams are adequate and safe. It is recommended that an inspection be carried out by a qualified engineer before repair works commence. This applies not only to the balcony but to the supporting walls as well.



تدور حول الزاوية WRAP AROUND CORNER



نوع الزخرفة DECORATIVE TYPE

دليل ترميز التصميم الحضري والعمارة

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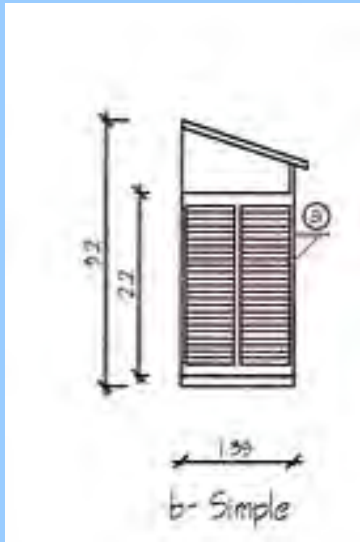
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Design Guidelines:

Balconies are of two general types: 1) projecting from the façade and 2) internal.

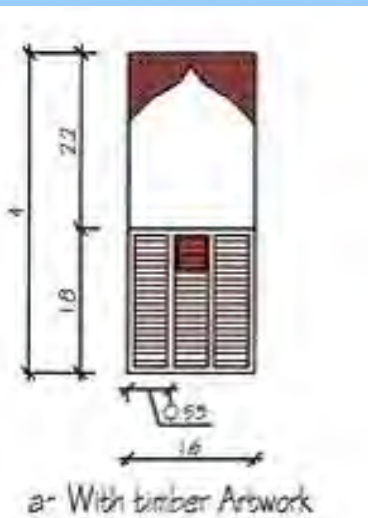
1. Timber balconies attached to the façade can be broadly categorized in two types: simple or decorative. Both these types may run the length of the main façade, or run around the corner.

a) Simple Type: It is modest in its construction and detailing, a simple timber pergola acts as a sunshade. The vertical sides are constructed of timber slat shutters (*Mashrabia*) which usually contain a small window hinged on top which opens 90 degrees to allow views and communication to the street. The balcony is usually supported by simple timber beams projecting from the façade.



الشبابيك بقواطع خشبية WINDOWS IN SCREENS

b) Decorative Type: The dimensions of these balconies were more generous than other type, and were usually placed on the main façade, often over the main entrance. The timber pergola was highly decorated, and the balcony was sometimes supported by an arched stone frame.



أنواع زخرفية DECORATIVE TYPE

1-Internal balconies do not protrude from the façade; instead they are located within the building enclosure on the external roof surface of a lower floor. The roof and its beams continue overhead, but the space is not enclosed by external walls. Instead, privacy and safety are provided by the same type of slat shutters (as found on projecting balconies). The roof beams are often supported from the wall edge and piers by Brackets (*Rukniyat*) of different styles and levels of detail. In order to provide additional sun shading, additional timber shutters may be installed behind the brackets at high level.

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SOURCE FOR TEXT AND DRAWINGS: ASSISTANT AGENCY FOR PLANNING

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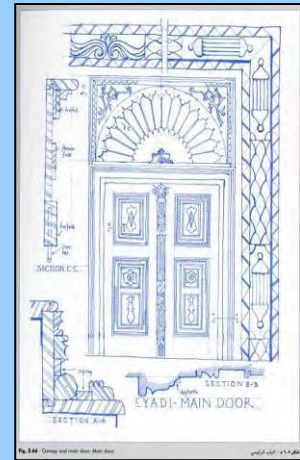
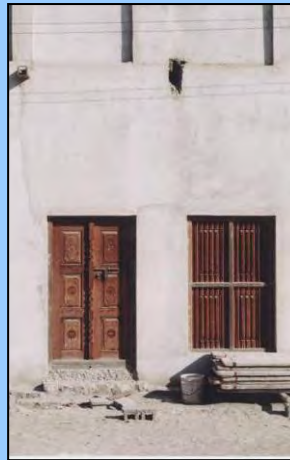
إضافة قواطع مشبكة ADDITIONAL SHUTTERS ABOVE SCREEN

Manual of Urban Design and Architecture

21- Building Elements: Doors

Background:

Doors are an important element of the façade, their design and materials often give the building a sense of identity. Many of the doors of traditional buildings are in a state of disrepair, or have in fact been removed and reused in newly constructed villas in the suburbs as a symbol of the family tradition and heritage.



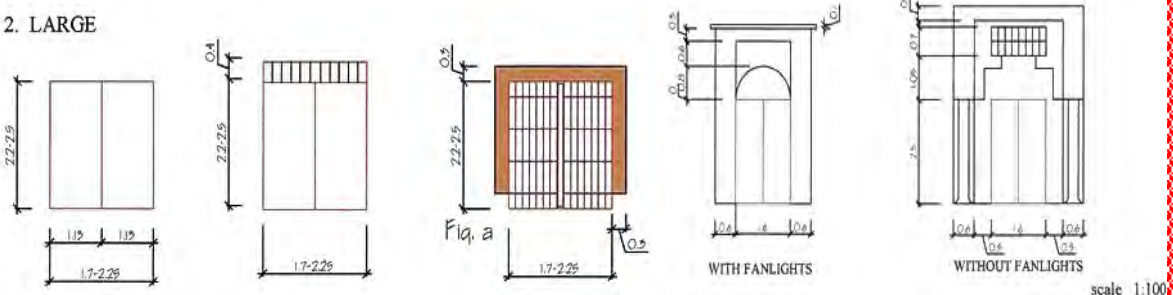
Implementation:

- 1- It is to be encouraged to repair existing doors using traditional materials and methods, this includes ironmongery. Where the original doors have been removed, doors similar in design, material, and color to the original should be installed.
- 2- Doors to new buildings and alterations to existing buildings must follow the design rules described below.

Design Guidelines:

Doors to buildings are to be constructed of timber, preferably oak. No non-timber doors or frames are allowed. The design may be of panels or broad timber slats in a vertical format. Ironmongery should be of a traditional design, painted black. No glazing insets are allowed. Doors may, however, be combined with overhead fanlights.

2. LARGE



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دليل ترميز التصميم الحضري والعمارة

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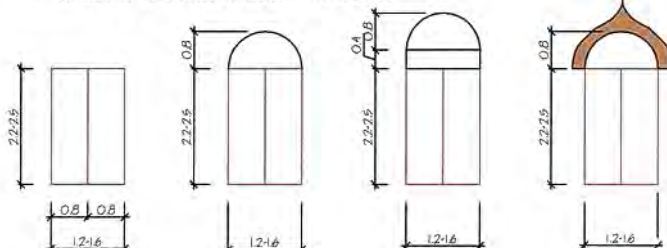
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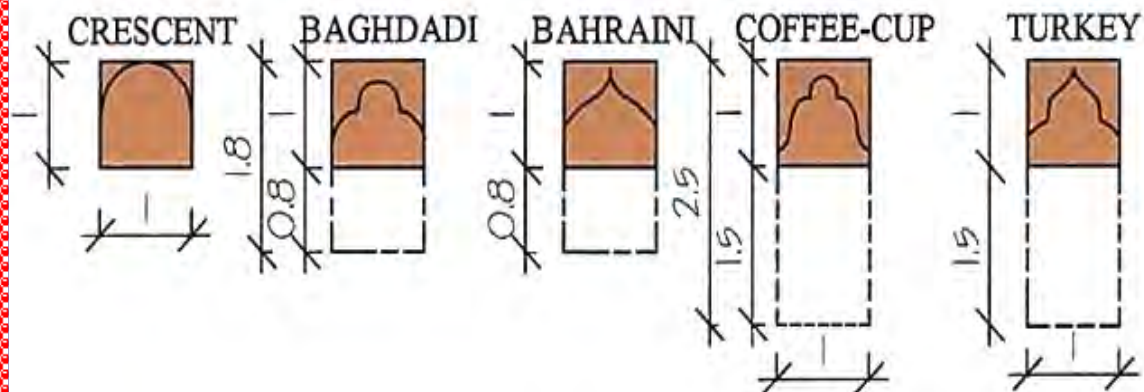
1. SIMPLE SUITABLE FOR FANLIGHTS



Design Rules: Decoration:

In order to relieve the rigid structural expression of the façade, various methods of ornamentation were developed; some having only a decorative use, others in addition to their visual appeal had a technical function.

1- Decoration on the façade often occurred within external recesses. This decoration took the form of plaster or gypsum arches of various designs and often appeared over doorways:



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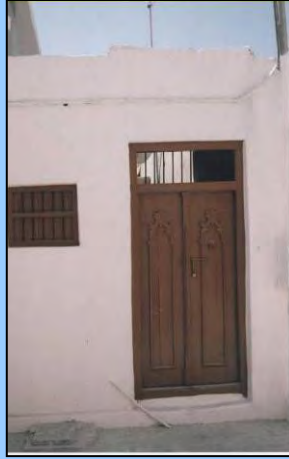
المصدر: الوكالة المساعدة للتخطيط - وزارة شؤون البلديات



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نماذج ممتازة من استعمال الابواب من
ناحية توقيعتها وشكل الباب والزخرفة التي



22- Building Elements: Elevation Composition

Background:

The traditional buildings in Manama and Muharraq were mostly constructed of materials found locally or nearby. Certain materials, in particular timber, were imported from elsewhere. The master builders of that time created a system of construction techniques recognizing the inherent strengths and weaknesses of the materials, their availability, and suitability for the climate and social customs of this region.

This system is composed of elements that are easily recognizable. However, their usage, placement, and composition are never repetitious; each building is unique to its setting and its requirements. The combination of these elements into a well-mannered composition that responds to the owner's needs and the immediate surroundings is testament to the skill of the master builders. These individual compositions, by responding to their neighboring buildings, formed a harmonious whole, the result which is to be seen in the traditional core areas of Manama and Muharraq.

Objective: This system of composing elements to create buildings that respond to their usage, materials, surroundings, and to the climate can and should still be used in these core areas. This system can be applied to traditional construction methods and techniques, as well as to modern materials and techniques, to existing buildings and to new buildings, from houses to commercial structures. This system is flexible and responsive; it is as modern as any western system, but is deeply rooted in Bahraini tradition and society. When used properly, this system will allow the new to blend in seamlessly with the existing, enhancing the concept of local identity and pride.

The System: The system is composed of two parts: 1) the individual elements and their proportions, and 2) the method of arrangement of the individual elements into a harmonious composition.

1- The Individual Elements: these consist of the following broad categories: Balconies, Doors, Garages, Parapets, Screens, Shop Fronts, Shutters, Signage, Windows, and Walls. These individual elements are based on a system of proportions originating out of the necessary construction dimensions of the materials. Their arrangement is based on the inherent proportions of the structural system, the location of rooms behind the façade, and the placement of windows and doors in response to their neighbors. Guidelines and codes have been developed for each of these elements which should be used in combination with these guidelines for their arrangement and composition on the façade.

2- The Method of Arrangement: The traditional system is based on the following concept: each element of the building is expressed individually; there is no attempt to create a coherent external architecture. The result is that the elevation becomes an expression of the individual elements which through their placement make the building readable as to what is going on inside behind the walls.

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Structural Grid: Holding the elements together is an underlying structural grid system which may or may not be expressed and was based on the strengths of the materials. This system was composed of the load bearing piers and beams, and infill areas between them consisting of panels, windows, badgir, etc. organized into a strict orthogonal grid. The piers were commonly 70cm wide x 70 cm deep at the corners, with minor piers of 35 cm wide by 70 cm deep interspersed. The beams at floor levels were usually up to 70 cm high. Minor cross beams, located between the floor levels, could be 10 cm – 25 cm in height. The spacing between the piers was commonly 1 meter wide, but the height between floors could vary significantly. Room heights were up to 4 meters; this allowed badgir to be placed at low levels bringing cooling air in to the room, forcing the warm air to rise. Often, decorative panels were inserted in the walls at high level to allow the warm air to escape.

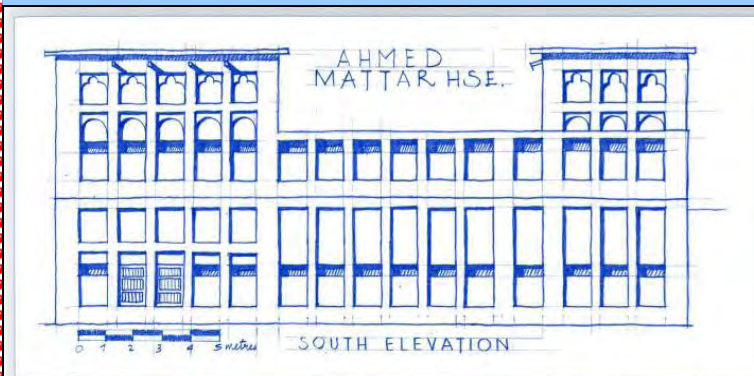


Fig. 5.9g - Exterior south elevation.

شكل ٥.٩ - الواجهة الجنوبية الخارجية

SOURCE: JOHN YARWOOD

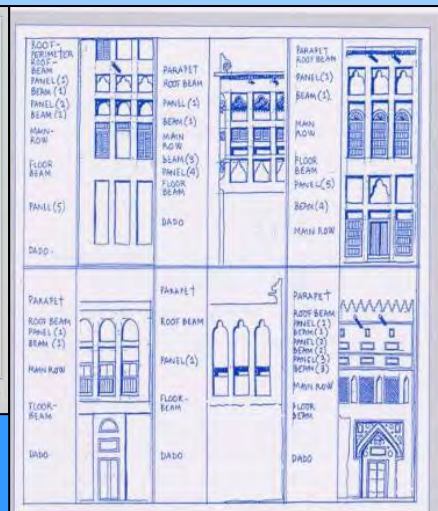


Fig. 2.1 - Analysis of Six typical bays.

شكل ٢.١ - تحليل ستة أنواع تقليدية من الأسطح الخارجية

Within the infill areas, a variety of elements are to be found, ranging from windows and doors, to *badgir*, to decorated gypsum panels, to simple recessed panels with or without decorative arches, etc. These elements are best documented by the following table:



Additional elements such as projecting balconies and internal balconies give a building a three dimensional quality. These balconies are also placed with respect to the grid system; their height and length are determined by the dimensions between the beams and columns. Thus, the strict grid system was relieved of its harshness and rigidity through functional elements which were often highly decorative.

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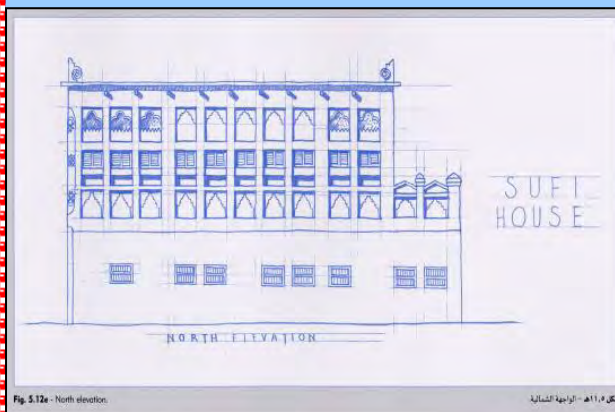
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Fig. 2.3 - A lexicon of realisations of elevation features.

شكل ٣.٢ - مسرد بعلامع الواجهات

When closely observed, it is to be seen that there is a variety of elements located within the infill panels. It is very rare that the panels are identical across the façade; this is due to the fact that different rooms and functions are occurring behind those panels. Different buildings also have different room heights; affecting the proportions of the panels and the number of elements placed within them. Thus, no two façades are identical; each maintains its interest and individuality.

Thus, proportions and examples for the individual elements as well as for the structural grid system can be given, but a set of elevation patterns cannot be developed since this system is designed to respond to the requirements of the individual site.

The Arrangement and Composition of the Elevation Today:

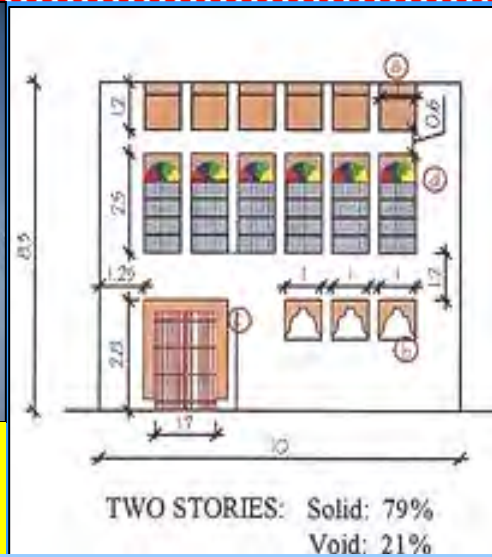
Due to the introduction of air conditioning, the function of many of the traditional elements such as the *badgir* has been lost. Windows now have glass to keep the cool air in, but the internal room heights in traditional buildings, once purposely generous in order to create cross ventilation and to guide the warm air upwards, are now a disadvantage, making the cooling of such internal room volumes expensive.

Modern standards have reduced room heights from anywhere between 2.50 meters to 3.00 meters generally. This is advantageous not only for the cooling of the space, but saves on construction costs as well, making houses more affordable.

This change in room heights will be reflected in the proportions of the structural grid system for new buildings. However, the system is still ideally suited for modern construction methods and materials. Reinforced concrete and block work construction both use the pier and infill concept. In addition, pre-fabricated units are well suited to such an orthogonal grid system. The general heights of traditional buildings are 10 – 11 meters for a two storey building including its parapet on the roof. This height is the equivalent today of a three storey building.



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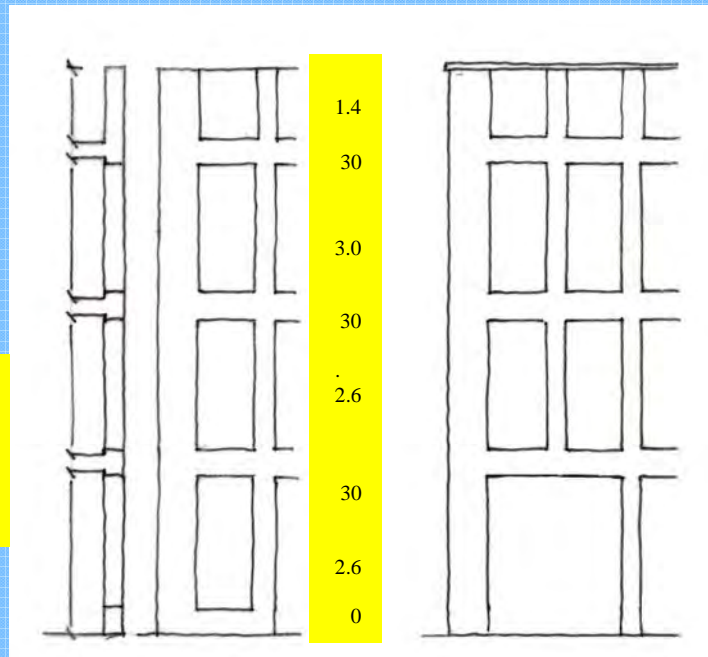
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The following sketches show the variety of traditional buildings, ranging from one and two storey structures both residential and commercial, to a new three storey building with today's reduced floor to floor heights:

THREE STOREY NEW
RESIDENTIAL W/ROOF
TERRACE

مسكن بثلاثة ادوار
مع سقف و سطح

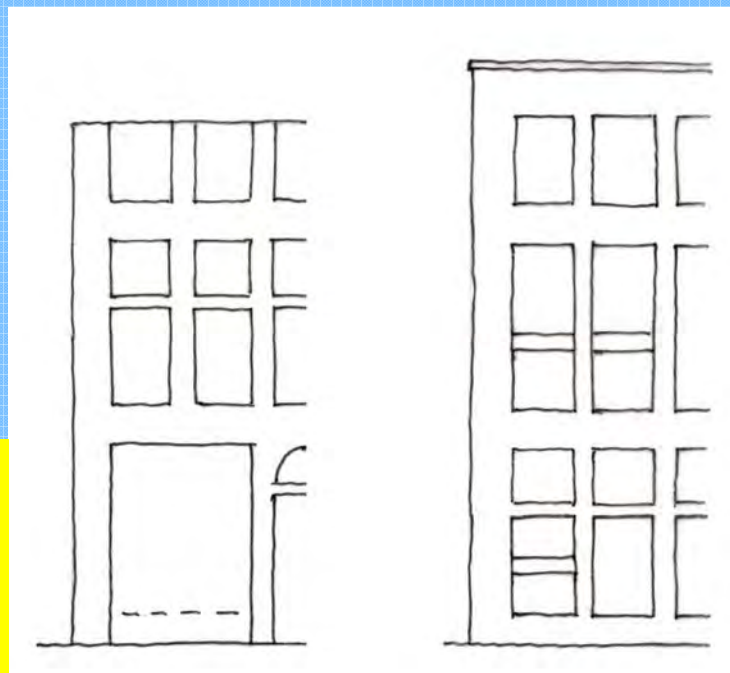


THREE
STOREY NEW
MIXED-USE W/
ROOF
TERRACE

مبنى من ثلاثة
طوابق في
استعمال مختلط

TWO STOREY
TRADITIONAL
MIXED-USE W/
ROOF TERRACE

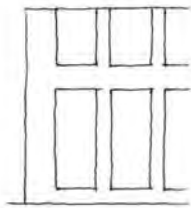
مبنى تراثي من
طابقين في استعمال
مختلط مع سطح



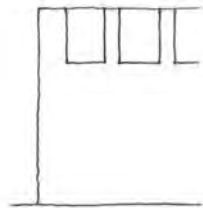
THREE STOREY
TRADITIONAL NO
ROOF TERRACE

مبنى تراثي من
ثلاثة طوابق مع
سطح

These sketches demonstrate that by using the traditional orthogonal grid system, new buildings can be designed to blend in seamlessly with the existing traditional buildings, while being economic to build and operate.



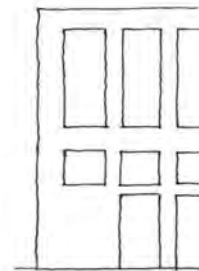
TWO STOREY
TRADITIONAL



ONE STOREY TRADITIONAL
W/ROOF TERRACE



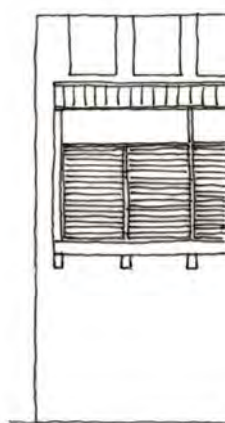
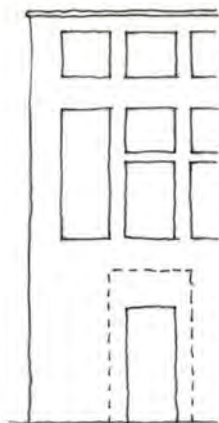
ONE STOREY
TRADITIONAL W/ROOF
TERRACE



TWO STOREY
TRADITIONAL
NO ROOF TERRACE

TWO STOREY
TRADITIONAL W/
ROOF TERRACE

طابقين تقليدية
مع شرفة

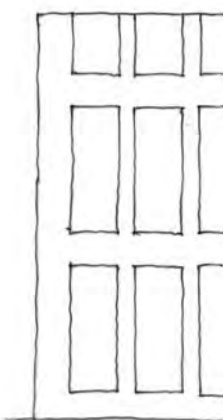
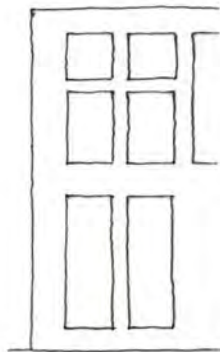


TWO STOREY
TRADITIONAL
W/BALCONY

طابقين تقليدية
مع شرفة

TWO STOREY
TRADITIONAL W/
ROOF TERRACE

طابقين تقليدية مع
سطح



TWO STOREY
TRADITIONAL
W/ROOF
TERRACE

طابقين تقليدية مع
سطح

23- Building Elements: Garages and Courtyard Parking

Background:

There is a high demand for parking spaces within the traditional core areas. However, the existing passages are often not wide enough for vehicular traffic, and no provision for parking on the individual property was made since the buildings were constructed before the advent of the automobile.

Implementation:

In order to meet the demand of parking either on or near to a resident's dwelling, parking spaces on that resident's individual property should be allowed where the size and location of the street is deemed adequate for vehicular access.

These parking spaces may take the form of a garage for a single car, or parking within the courtyard, accessed from a single point of entry. This applies for existing as well as new buildings.

1-Garage:

A) A garage for a single car may be constructed within the building itself or attached behind the property boundary wall with its door flush with the front of the building/wall.

B) The garage may be of any width, but the height of the garage must be in proportion to the ground floor façade.

C) The garage may have only one door, maximum 3 meters wide. The height of the garage door must be in proportion to the other doors and windows of the façade. The door is to resemble traditional two leaf shop front doors, constructed of timber with broad planks arranged vertically. The door leafs may swing either in or out. However if they swing outwards, no danger may ensue for passing pedestrians or vehicles.



DOUBLE WIDTH DOOR PROHIBITED

ممنوع باب بفر دتین



DOUBLE LEAF DOOR TO GARAGE

باب کراج منفرد بفر دتین

دليل ترميز التصميم الحضري والعمارة

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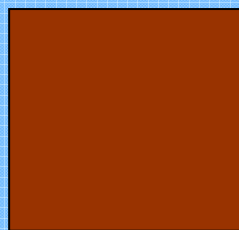
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- D) Alternatively, the garage door may be of a roller shutter type, constructed of thin timber slays arranged horizontally. This roller shutter may not be mounted on the external surface of the façade, instead they must be built into the lintel or mounted on the inside wall of the garage.
- E) The colors of such doors and roller shutters are to be a traditional brown, sea-green, or sea-blue

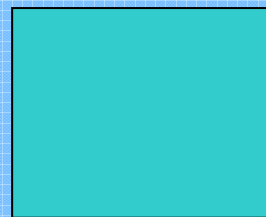
2- Courtyard Parking:



Sea-green
أخضر بحري



Traditional Brown
بني تقليدي



Sea-blue
أزرق بحري

- A) Vehicles may be parked within the courtyard in an appropriate manner.
- B) Vehicle access to the courtyard is allowed through a single gate, maximum 3 meters wide placed in a suitable location in the boundary wall. The height of this wall is to be a minimum of 3 meters. The height of the gate may also be 3 meters and without a lintel.

In this case the gate is to resemble traditional two leaf shop front doors, constructed of timber with broad planks arranged vertically. The door leafs may swing either in or out, however if they swing outwards no danger may ensue for passing pedestrians or vehicles. If the height of the opening is less than 3 meters, then a lintel is necessary. In this case, the gate can either be of the shop front type or the roller shutter type as described above, and painted a traditional brown, sea-green, or sea-blue.

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DOUBLE LEAF DOOR TO COURTYARD PARKING

باب ذو فتحتين لموقف سيارات مفتوح

24- Building Elements: Parapets and Roof Details

Background:

Parapets protected the building's inhabitants from view, especially during very hot weather when they would sleep out on the roof terrace. A certain type of parapet named Badgir was constructed with offset panels separated by a gap which captured and directed any breeze down to the roof terrace floor where the people would be sitting or sleeping, a natural form of air conditioning requiring no power or mechanical equipment. Today, with the advent of air conditioning, no one will return to sleeping out on the terrace. However, parapets still serve useful purposes in regards to visual privacy when the terraces are used for non-sleeping uses, safety for children and adults, as well as visually blocking the view of roof mounted technical devices such as water tanks, air conditioning units, etc.,

Implementation:

- 1- It is to be encouraged to repair existing parapets using traditional materials and methods. Where they have been removed, parapets similar in design, material, and color to the original should be installed.
- 2.-Parapets of new buildings and of existing buildings that require alterations must follow the design rules described below.

Design Rules: Parapets

Parapets are of three types: 1) solid panels between masonry piers, 2) timber screens between masonry piers, and 3) *Badgir*.

1-Solid Panel: This type consists of smooth, plain, thin panels set between piers. The piers are spaced in accordance with the structural grid of the floors below, typically at 0.9 – 1.2 meter intervals with a height of between 0.9 and 1.2 meters above the surface of the roof terrace. The panel's interior face is flush with the interior face of the pier, the difference in the thickness of the panel and pier creating a deep reveal on the street elevation. The top edge of the panels is flush with the piers. The panel is the same color as the pier and exterior façade.



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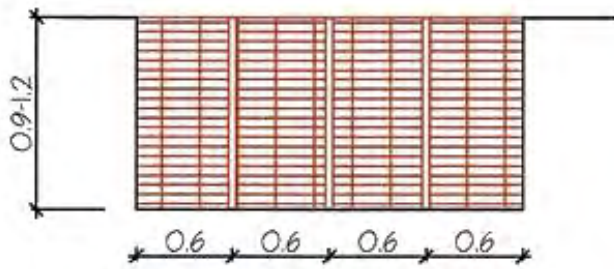
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3- Badgir: Badgir are similar to the solid panel type except that the panel is split in two horizontally. The upper panel is usually flush with the inside face of the masonry piers, the lower panel is placed forward of the upper panel so that an air gap of approximately 15 centimeters exists between them. The panels' height overlaps one another by approximately 15centimeters.

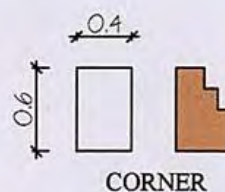
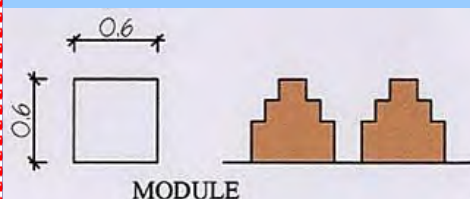
Design Rules: Roof Details

Parapets developed several detailed features, the most common being a coping with or without Merlons.

1- Coping: lintels that are as wide as the piers are often used to span the tops of the panels and piers of a pediment, creating a coping which gives the pediment a uniform appearance. Due to the reveal of the panels, this creates a recess towards the exterior façade. This recessed panel may be decorated with plasterwork arches of a variety of traditional patterns.



2- Decorative elements known as *Merlons or Hamaem* are commonly found on top of the parapets of traditional buildings. These have various traditional patterns ranging from simple squares to curved crests. They are located at the corners, and on more prominent buildings, run the length of the façade.



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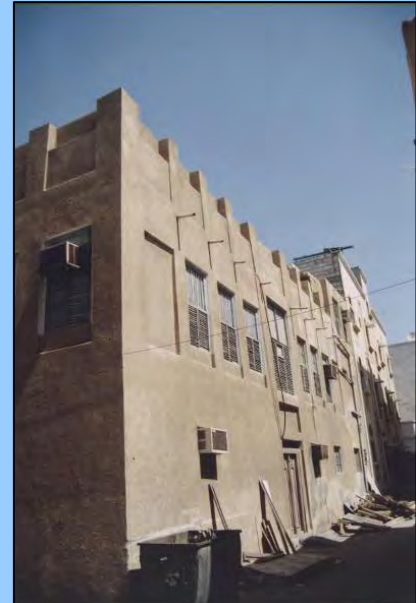
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Typical Roof Terrace Badgirs
سطح نمونجي مع ملاقف الهواء البادكير



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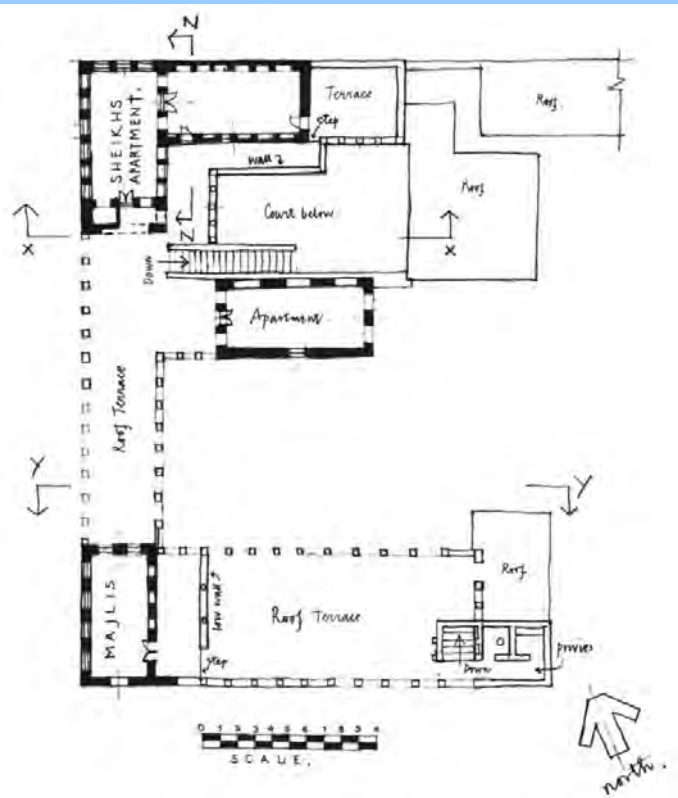
25- Building Elements: Roof Terraces and *Badgir*

Background:

Bahraini society in the past, before the introduction of electricity and mechanical devices, used roof terraces to sleep on and spend time relaxing there especially in the evening hours of the hot season. The parapets of roof terraces were designed in a manner that would capture breezes and direct them near the floor of the terrace at the same level where people sat or slept. These parapets were also high enough to prevent overlooking towards nearby neighbor's private domains.

Implementation:

- 1- Roof terraces should be encouraged to be built. They will be useful for:
 - i) When electricity is disabled people can use the terrace in the hot season to sleep on.
 - ii) They can be used as outdoor living rooms when the weather is pleasant.
 - iii) They can be used as play areas for children under the supervision of an adult.
- 2- The design of the parapets surrounding roof terraces should be similar as those of the traditional pattern. This would:
 - i) Induce air circulation onto the roof terrace and makes it attractive to use.
 - ii) Their use will provide continuity in the architectural pattern of building elevations, and would be an element that would provide continuity in aesthetic and the sense of place within the heritage areas.



A FIRST FLOOR PLAN
AND TWO CROSS
SECTIONS SHOWING
BADGIRS IN SECTION AND
ELEVATION. HOUSE OF
SHEIKH SALMAN IN
MUHARRAQ.
Drawing by John Yarwood,
1980s.

مخطط الطابق الاول ومقطعين
تظهر ملاقف الهواء في مخطط المقطع
والواجهات في بيت الشيخ سلمان في
المحرق

المصدر: جون ياور 1980

دليل ترميز التصميم الحضري والعمارة

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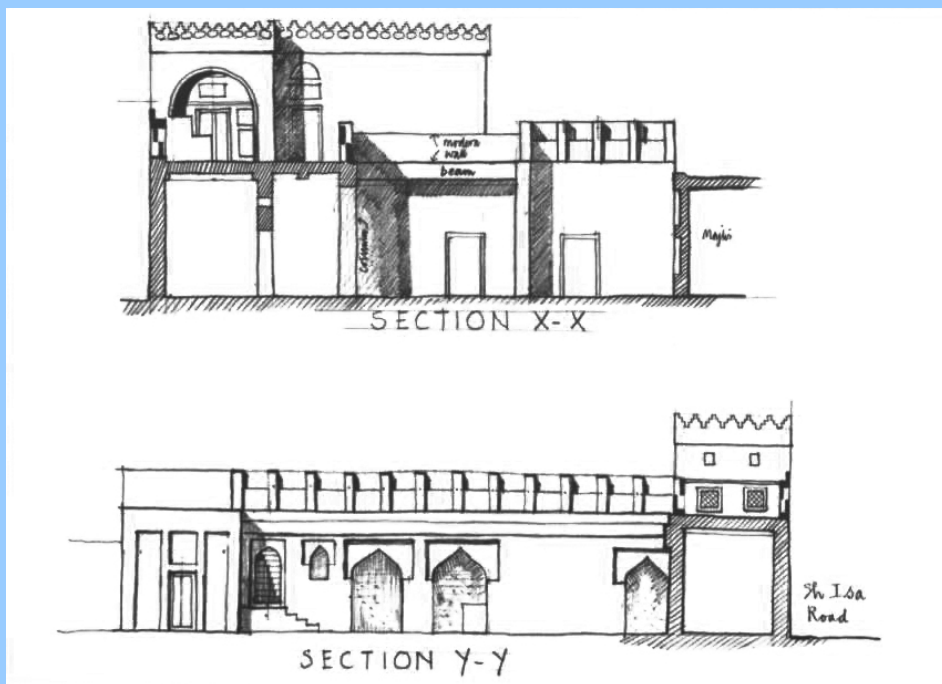
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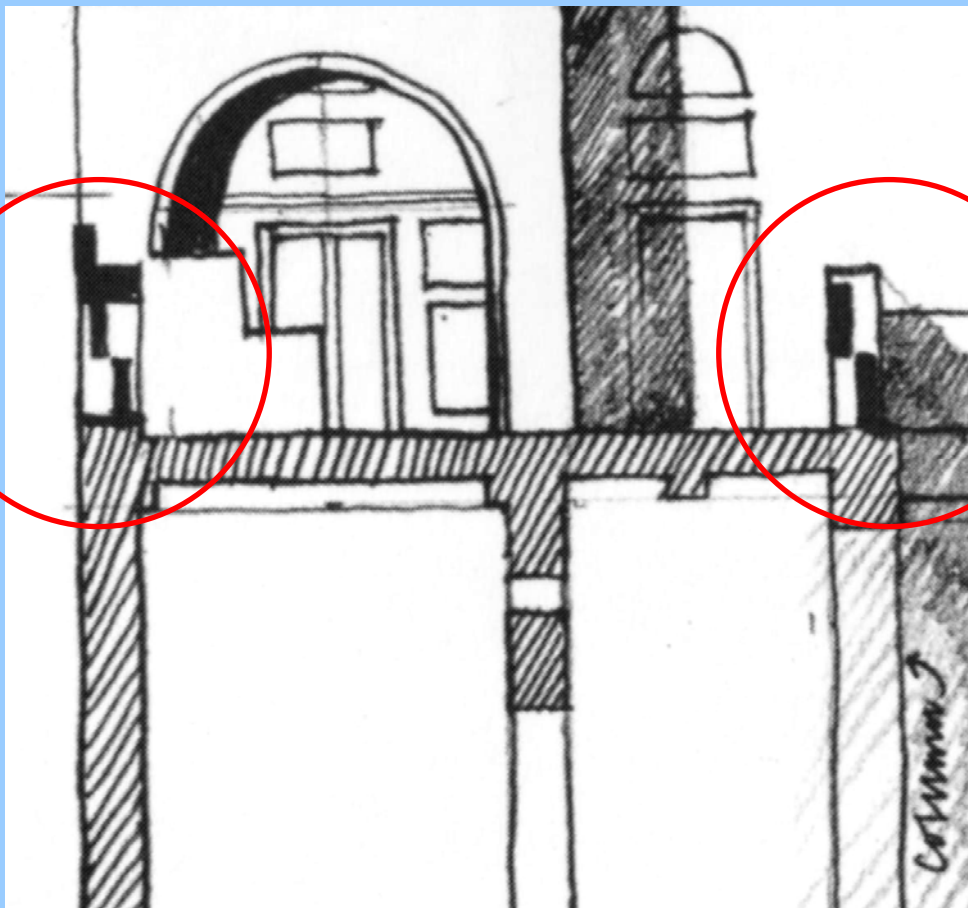


3- Avoiding overlooking from roof terraces onto the private domain of adjacent neighbors. This can be accomplished by following these rules:

i) The parapet should be high enough (about 1.75m) to surround those areas of the roof that afford direct views of neighbors' private domains such as courtyards and/or gardens.

ii) Exit doors to the roofs that afford views of neighbors' interior courts/gardens must be blocked by a parapet, or located away from the side allowing such views.

iii) Windows or openings in stair towers must be located high enough to prevent them being for overlooking.



DETAIL OF BADGIRS ON TWO SIDES OF TERRACE

تفصيل ملاقف الهواء من الجهتين من السطح

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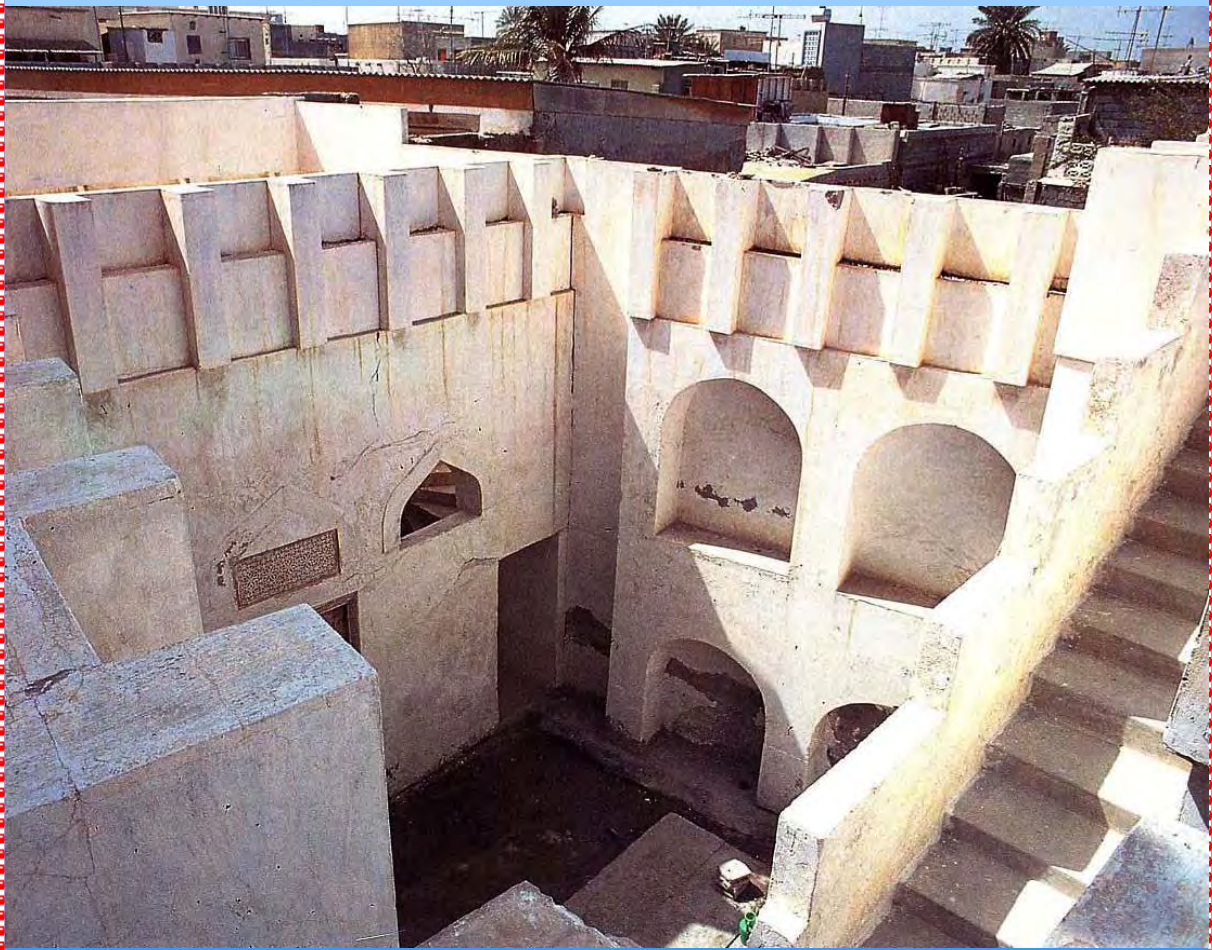
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VIEW OF A COURTYARD OF A HOUSE IN MUHARRAQ SURROUNDED BY
TERRACES WITH BADQIRS.

منظر من حوش مسكن في المحرق محاط بسطح من ملاقف الهواء (البادكير)

Manual of Urban Design and Architecture

25- Building Elements: *Sabat*: Rules for Building

Background:

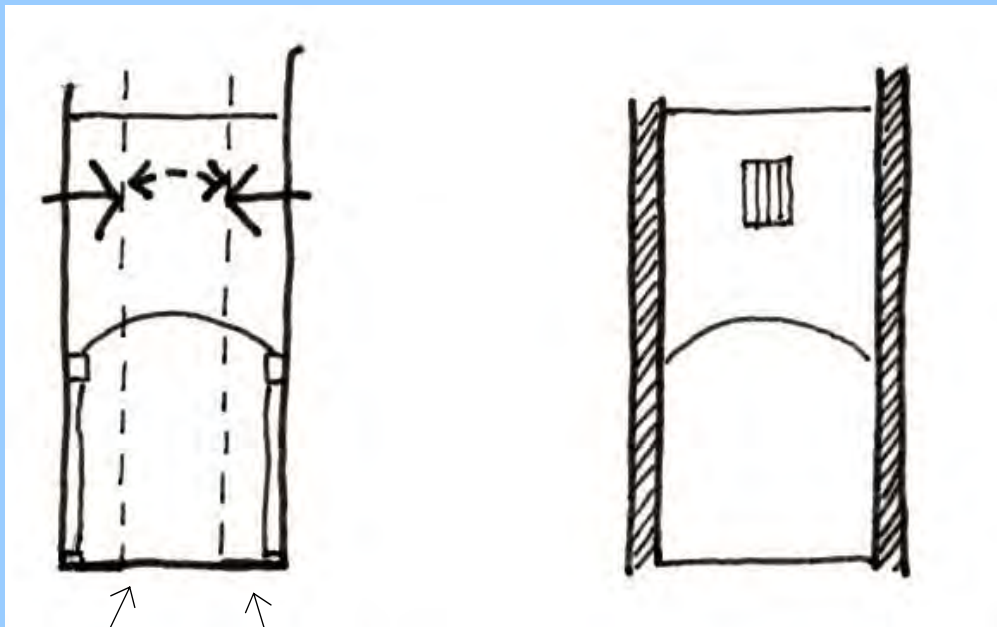
The possibility of bridging the public-right-of-way is an extension of the concept of the *Fina*. It is an element that allows the creation of additional space attached to a building. The tradition of building *Sabats* was not a part of the local *Urf* (customs) in Muharraq and Manama. However, it is widely used in most traditional Arab-Islamic cities. It is an effective method for creating additional space and its use provides shade for pedestrians in the street and can be an excellent cover for front doors of buildings if they are built above them.

Implementation:

1- *Sabats* are allowed to be built when one or more of the following conditions arise:

1.1. When opposite buildings on both sides of the street are owned by the same person or family.

1.2 When a house is small in area and whose height is within the maximum limit allowed, and the owner can demonstrate that some or all of his requirements for additional space can only be met by building a *Sabat*.



فناء FINA

بين حائطين ON 2 WALLS

THE SABAT CONCEPT IS RELATED TO UTILIZING THE AIR SPACE OF
THE FINA ON BOTH SIDES

فكرة السبات وعلاقتها باستغلال الفضاء الهوائي من جهتي الفناء

دليل ترميز التصميم الحضري والعمارة

-25 : :

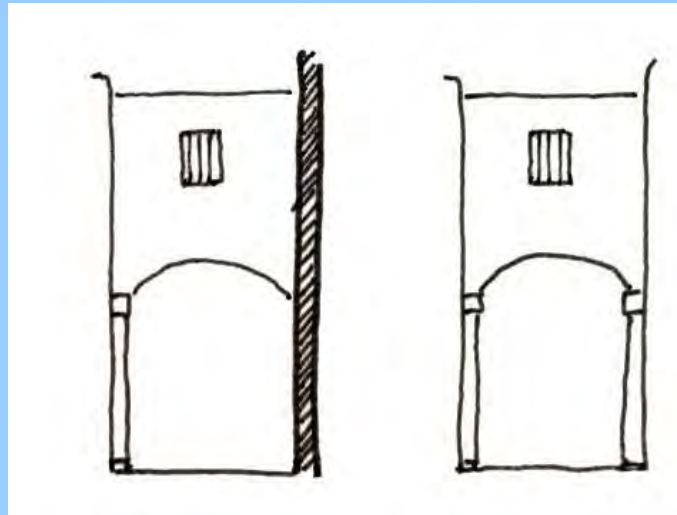
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-1.1

- 2.1



ON COLUMNS & WALL
على اعمدة وجدار

ON 2
COLUMNS

ALTERNATIVE SUPPORT SYSTEM FOR A SABAT

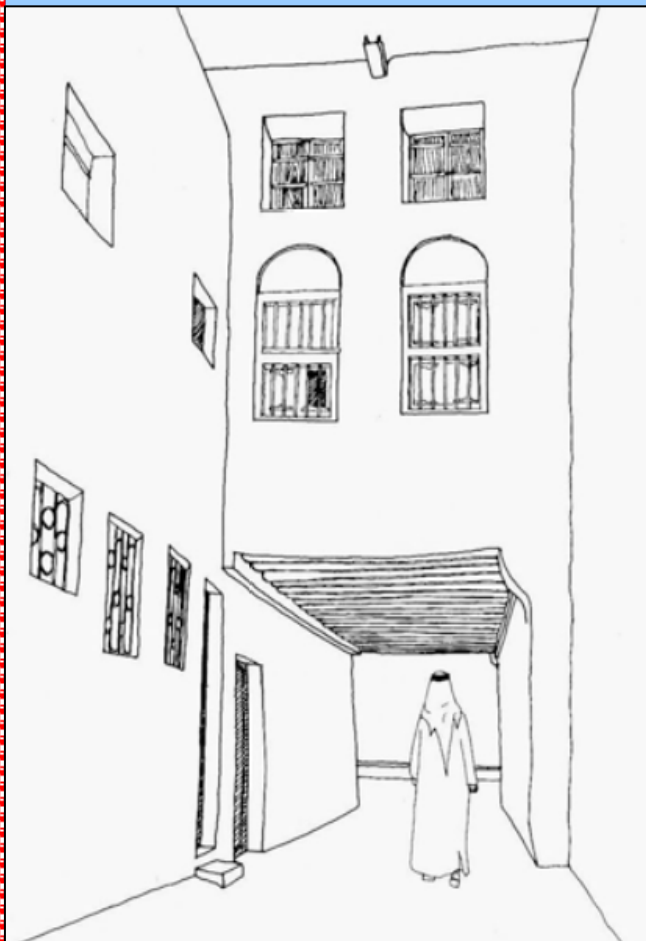
بدائل لنظام تدعيم الصبات

2- The design and structural requirements of *Sabats* are:

2.1- Ideally a *Sabat* should be supported on both sides structurally independent of the walls of the buildings on opposite sides of the street. This allows change of ownership easily. The supports have to be built in such a manner that they touch the walls of the building, so that no space, however small, is not taken from the right-of-way.

2.2- The support of one side of the *Sabat* can be on the building whose owner wishes to build it. The other side has to be supported by columns built adjacent to the wall of the opposite neighbor provided careful design is made to ensure no damage occurs to the wall or its foundation.

2.3- The technical aspects of the support has to be determined on a case by case basis with the aid of a qualified structural engineer who will ensure that no damages will occur to the walls that are adjacent to the supports.



VIEW OF A SABAT IN TUNIS.

EXAMPLES OF TWO
SABATS: ON THE LEFT
FROM TUNIS, ON THE
RIGHT FROM HOFUF IN
EASTERN SAUDI ARABIA.
ALTHOUGH THE CONCEPT
IS THE SAME, THE
CHARACTER AND SENSE
OF PLACE IS RELATED TO
THE CONTEXT.

Both sketches are from the article
by B. Hakim titled: "The Urf and
its role in diversifying the
architecture of traditional Islamic
cities". *Journal of Architectural
and Planning Research*, 11:2,
1994, pp. 108-127.

Sketches taken from the book: *Arabic-
Islamic Cities: Building & Planning
Principles*, London, 1986, by B.
Hakim.

-2

1.2

وينبغي .

2.2

3.2

أمثلة على نوعين من السبات :

على اليمين في تونس وفي الشمال في
الهفوف شرق العربية السعودية . في
الحالات كافة الفكرة هي واحدة وهو الطابع
المميز والشعور بالمكان المرتبط
بالمحتوى الحضري.

المصدر: بسيم حكيم
“ ألّهفوف ودورها في التنوع العمارة
المحلية في المدينة الإسلامية ”.
مجلة البحوث المعمارية والتخطيطية
1994



A SABAT IN HOFUF, SAUDI ARABIA.
PALM TREE TRUNKS ARE USED FOR
THE MAIN STRUCTURE FOR SUPPORT.

سبات في الهفوف—المملكة العربية السعودية
مصنوعة من جذوع النخيل وقد استعملت لتثبيت الهيكل الرئيسي

Manual of Urban Design and Architecture

26- Building Elements: Screening of Roof Mounted Technical Devices:

Background:

Roof mounted air conditioning units, water tanks, gas cylinders, etc. spoil the visual appearance of traditional buildings. In many cases, the building's parapet is not high enough neither to block the pedestrian's view from the street nor from an upper storey window of nearby buildings.

Implementation:

Light weight screens are to be constructed which hide roof mounted mechanical installations. This rule applies when no parapet of appropriate height is present to block the view of the roof mounted machinery from street level or from a neighbor's upper storey window. This applies to existing buildings and to new buildings.

1. The screens are to be of timber and the design to be based upon the traditional louvered or open latticework pattern.
2. The screens are to be mounted on appropriately sized timber posts attached to the roof. Care must be taken so that the attaching of the posts to the roof terrace surface does not cause any damage that may lead to leaks during rain.
3. The screens may be attached to the posts either as lift-out or swinging panel where access is necessary to the equipment. Appropriate distances from the machinery should be taken into account when placing the screens.
4. The height of the screens is to be equal to the highest machine or part thereof. This does not include satellite dishes.
5. The panels are to be evenly spaced if possible.
6. The screens may be painted a traditional brown, sea blue or sea green are also traditional colors.



الحالة الراهنة EXISTING CONDITIONS

دليل ترميز التصميم الحضري والعمارة
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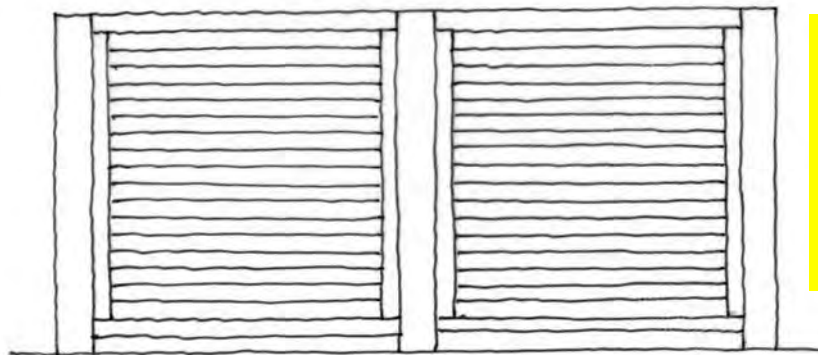


السّارة تحجب الاجهزة PRAPET HIDE EQUIPMENT



EXAMPLES OF EXISTING SCREENS

أمثلة للقواطع (الغرابيل) المتوفرة في المباني



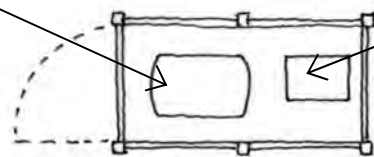
HEIGHT=
HEIGHT OF
EQUIPMENT

الارتفاع
يساوي
ارتفاع الأجهزة

الحاجز يمح بالفراغات SCREENS EVENLY SPACED

WATER
TANK

خزان الماء

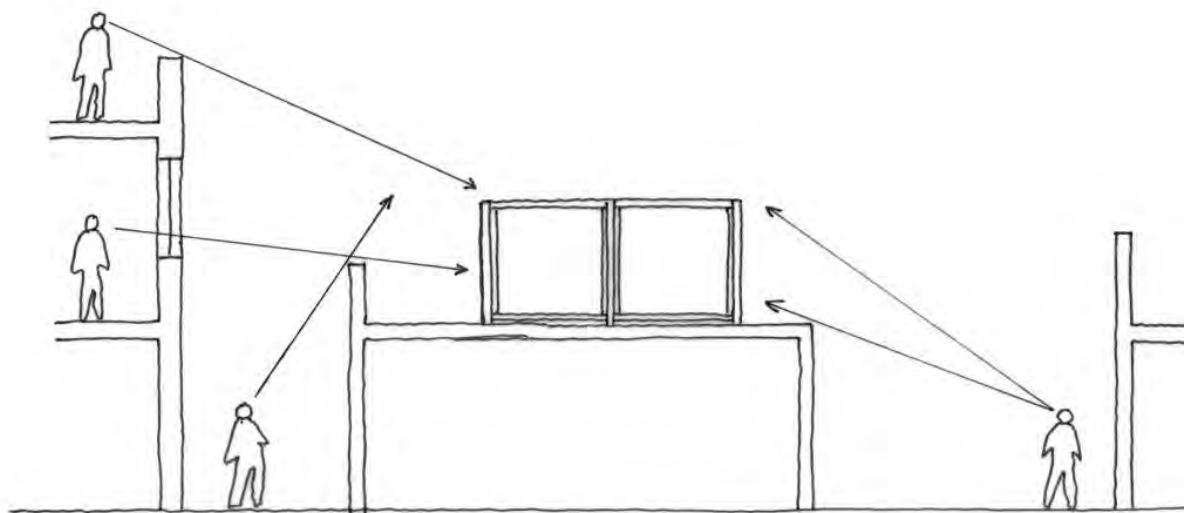


SPLIT AC
UNIT

جهاز التكييف
المنفصل

SWING OR DEMOUNTABLE PANELS

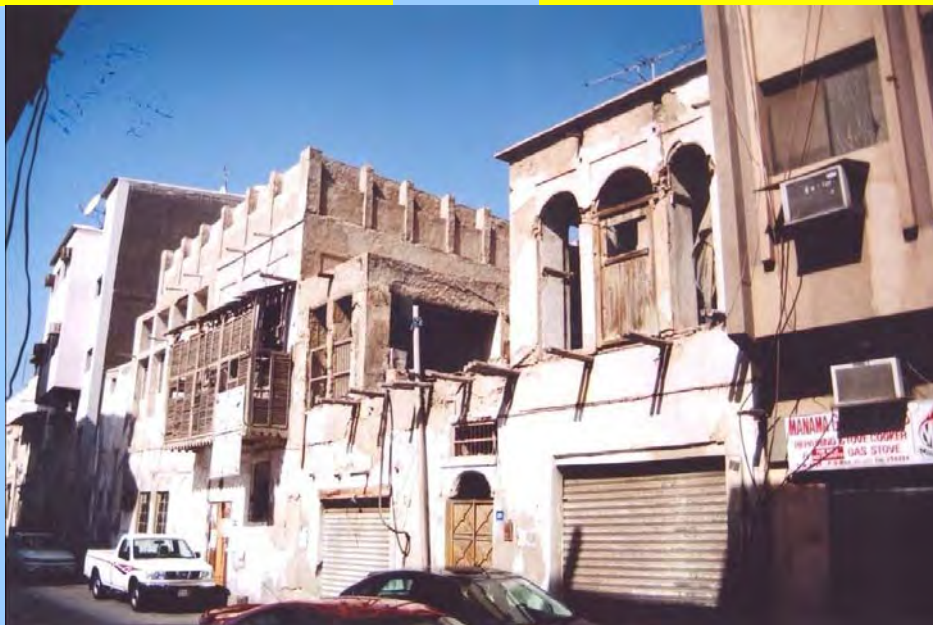
قواطع متحركة او ثابتة



بستارة

WITH PARAPET

بدون ستارة WITHOUT PARAPET



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28- Building Elements: Screening and Placement of Wall Mounted Air Conditioning Units

Background:

The installation of wall mounted air conditioning units onto the facades of the buildings is often below 2.00 meters above ground level, thus causing excess heat generation within the street and poses a physical danger to passers-by. When no existing window is present, walls have had simple holes punched out. Where windows do exist, no protection of the bottom sill has been provided. In both cases, the wall materials are not suited to the vibration of the machines and thus tend to crack and fall apart. In addition, condense water often runs down into the walls causing further damage. The placement of the units as well as the design of the unit itself often take no regard of the composition of the façade and thus spoils the visual appearance of the building.

Implementation:

1. The placement of wall mounted air conditioning units onto the façade of the building should be done in such a way to be as unobtrusive as possible. The existing structural grid pattern shall be used as a guideline for placement. The bottom of the air conditioning unit shall not be located below 2.5 meters above street level.
2. The units shall be placed behind a screen constructed of timber in a latticework or other traditional pattern. This screen is to have two sides, a front, and a bottom. The bottom of the screen may be slightly below the 2.5 meter level.
3. The screens are to be painted a traditional brown.
4. All appropriate protective measures are to be taken to prevent damage to the walls constructed of traditional materials. This includes protecting the window sills from vibration damage as well as the wall from condense water emanating from the air conditioner.
5. If the air conditioner is located within a structural recess, a flat screen that fills the entire recess may be substituted. However, this screen may not protrude beyond the recess. The screen must meet the design standards described above.



دليل ترميز التصميم الحضري والعمارة

وضع الغرابيل على الأجهزة المركبة على الجدران :

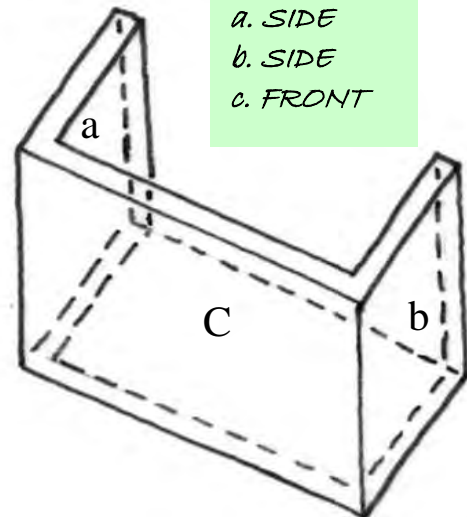
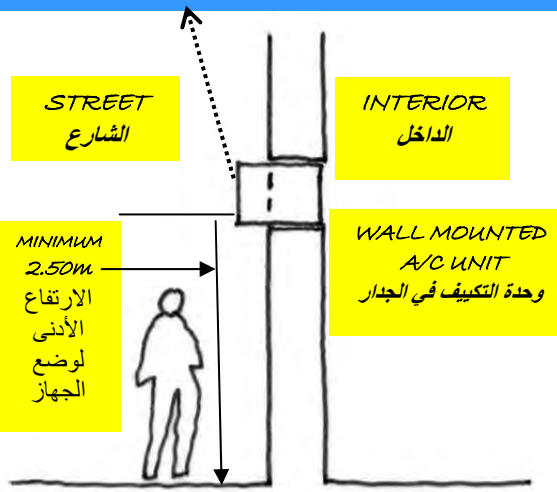
-28

رؤية



SPLITS ARE ALSO TO BE SCREEN
الوحدات المنفصلة يجب تغطيتها

HEAT EXHAUST
استنفاد الحرارة



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29- Building Elements: Shop Fronts

Background:

Shop fronts are an important element of the façade; their design and proportion give the building a sense of identity and serve to attract customers to the businesses located within the building. Many of the shop fronts of traditional buildings are in a state of disrepair, often have been altered, and are visually unappealing. The shutters used on the shop fronts are often not of traditional design and lead further to the unattractiveness of the building and street.

Implementation:

- 1.1- It is to be encouraged to repair existing shop fronts; this includes using traditional materials and methods for doors and windows including ironmongery. Where the original doors have been removed, doors similar in design, material, and color to the original should be installed. Where the proportions of the shop front opening have been unsuitably altered, this should be corrected.
- 2- Doors to new buildings must follow the design rules described below.



Design Guidelines:

- 1- Shop fronts to buildings should be in proportion to the other doors and windows of the façade, and respect the structural grid system. Shop front windows may not exceed 2 structural bay widths (maximum 3 meters). The shop front door may be placed within these two bays, or placed in the next bay separated from the shop front window by either a major or minor wall pier. In either case, the overall opening in the wall for the shop front window must be either square or have a vertical format.
- 2- Doors, door frames, and window frames are to be constructed of timber. No non-timber doors or door/window frames are allowed. Ironmongery should be of a traditional design, painted black. Large glazing insets are allowed in doors, but glass doors are prohibited.
- 3- Doors and windows may have shutters. The shutters are to resemble traditional hinged and/or folding suq shutters, constructed of timber with broad planks arranged vertically. The door leafs should fold back against themselves so as not to protrude into the *Fina*. No glazed insets are allowed. However, open timber lattice work or other traditional patterns may be inserted to allow passersby to view the goods on display during non-business hours.

دليل ترميز التصميم الحضري والعمارة

-29-

:

الخلفية:

تعتبر واجهات المحلات التجارية عنصراً هاماً من العناصر الجمالية الخارجية للمبنى ; إن تصميمها و توزيعها يعطي المبنى إحساس الهوية و يخدم في جذب الزبائن إلى النشاط التجاري المتواضع فيه . إن حالة الكثير من واجهات المحلات التجارية للمباني التراثية في حالة تحتاج إلى الترميم , قد تم تعديل بعضها , ولكنها غير ذات مظهر جذاب . غالباً ما لا يكون (مصراع الإغلاق) المستخدم في واجهات المحلات مصمماً تصميمياً تراثياً و يؤدي إلى مظهر غير جذاب للمبنى و للشارع .

التطبيق :

- 1- من الموصى به القيام بصيانة واجهات المحلات الموجودة ; و يتضمن هذا استخدام طرائق و مواد تراثية للأبواب و النوافذ بما في ذلك الأجزاء المعدنية . وحيث كانت قد تمت إزالة الأبواب الأصلية , فإنه من الواجب استبدالها بأبواب مشابهة في التصميم , المواد , و اللون للأبواب الأصلية . وحيث كانت توزيعات فتحات واجهات المحلات قد تم توزيعها بشكل غير ملائم , فإنه من الواجب تصحيحها .
- 2- يجب لأبواب المباني الجديدة أن تتبع قوانين التصميم الموصفة فيما يلي .

إرشادات التصميم :

- 1- يجب أن يتم توزيع واجهات المحلات التجارية في المباني مع الأخذ بعين الاعتبار للنوافذ و الأبواب الأخرى لواجهة المبنى , و بالتوافق مع نظام الإنشاء . يجب ألا تتعدى نوافذ واجهات المحلات التجارية مقدار فسحة فراغين إنشائيين (3 امتار كحد أقصى) . و من الممكن أن يتوضع باب المحل الأمامي ضمن هذين الفراغين , أو ضمن الفراغ التالي بشكل منفصل عن نافذة المحل الأمامية إما بدعامة حائطية أساسية أو ثانوية . و بكلا الحالتين , فإن شكل الفتحة الجدارية لنافذة واجهة المحل يجب أن يكون إما مربعاً أو ذو شكل شاقولي .
- 2- يجب أن تصنع الأبواب , و إطاراتها , و إطارات النوافذ من الخشب . وليس مسموحاً بأبواب أو بإطارات أبواب/نوافذ غير خشبية . يجب أن تكون الأجزاء المعدنية ذات تصميم تراثي , مطلية بالأسود . من المسموح إدراج قطع كبيرة من الزجاج في الابواب , إلا أن الأبواب الزجاجية غير مسموح بها .
- 3- من الممكن أن يكون للأبواب و النوافذ (مصاريع إغلاق) . المصاريع يجب أن تُشابه المصاريع التراثية و/أو مصاريع السوق القابلة للطي , يتم صنعها من الخشب مع لوح من الخشب الثقيل و المتوضع بشكل عمودي . درفتا الباب يجب أن يتم طيهن بعكس بعضهم البعض بحيث لا ينتآن في الفناء . من غير المسموح إدراج قطع كبيرة من الزجاج . على أية حال , فإنه يفي بالغرض وضع شبكة خشبية مفتوحة (شعرية) أو نماذج تراثية أخرى من الممكن إدراجها بحيث تسمح للعابرين برؤية البضائع على الواجهه خارج أوقات و ساعات العمل .

- 4- Alternatively, the shutters may be of a roller shutter type, constructed of thin timber slays arranged horizontally. This roller shutter may not be mounted on the external surface of the façade, instead they must be built into the lintel or mounted on the inside wall of the garage. Metal, aluminum and plastic roller shutters are not permitted.



SOURCE: JOHN YARWOOD

- 5- The colors of such doors and roller shutters are to be a traditional brown, sea-green, or sea-blue.



Sea-green أخضر بحري



Traditional Brown بني تقليدي

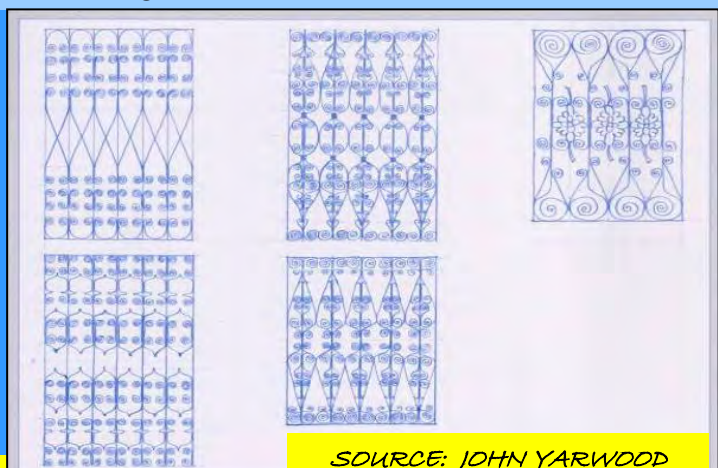


Sea-blue أزرق بحري

- 6- Iron screens in traditional decorative pattern may also be used as window and door shutters. These are to have a vertical format, and may fold against themselves sideways along a metal track. This track must be flush with the lintel and floor; no surface mounted tracks are permitted. Iron screens are to be painted black, traditional brown, sea-green, or sea-blue.



IRON SCREENS شبابيك حديدية



SOURCE: JOHN YARWOOD

Fig. 2.6 - Wrought iron grilles

شكل ٢.٦ - شبابيك مصنوعة من الحديد المطاوع

4- و كحل بديل فإنه من الممكن إدراج (مصراع إغلاق) من النمط الاسطواني , مصنوع من شرائح من الخشب الرقيق مرتبة بشكل أفقي .لا يمكن وضع هذا المصراع الاسطواني على السطح الخارجي من الواجهه , بل يجب أن يتوضع بداخل العلية أو ضمن الجدار الداخلي للكراج . من غير المسموح استخدام المصاريح الاسطوانية من المعدن , الألمنيوم أو البلاستيك .



5- يجب أن تكون الألوان للأبواب والمصاريح الاسطوانية بني ترابي , لاذوردي , أو أزرق بحري .



6- يمكن استخدام السواتر المعدنية في النموذج الزخرفي التراثي كمصاريح للنوافذ و الأبواب . و يجب أن تكون ذات شكل شاقولي , و يمكن أن يتم طيها بعكس بعضها بشكل جانبي على طول المسرى المعدني . يجب أن يكون هذا المسرى مُحاذي للعلية و للأرضية ; ومن غير المسموح بالمساري المتوضعه على السطح . يجب طلاء السواتر الحديدية بالأسود , البني الترابي , اللاذوردي أو الأزرق البحري .

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30- Building Elements: Signage

Background:

The visual appearance of street signs and commercial signs through out the traditional areas of Muharraq and Manama are often inconsistent, visually unattractive, or non-existent. There is also no visual indication that these are special zones of traditional heritage.

Implementation:

1. Street signs within the conservation zone should adopt the brown Background color and the same font of white lettering as the current national heritage signs. This is the standard for street signs in many parts of the world in conservation zones and is quickly and easily recognizable to visitors.
- 1.2 All new commercial signs on all buildings located along non-commercial roads are to be painted on timber and front lit. Alternatively, individual letters may be surface mounted on to the façade. No protruding box, back-lit signs are to be permitted. This applies to all buildings, not just to those of traditional design and construction.
- 3- The size and placement of the signs, along with the design and type of the lighting should respect the visual composition of the façade.



FRONT LIT SURFACE MOUNTED SIGNS

علامات مثبتة مع الانارة في الواجهات



BACK LIT SIGNS PROHIBITED

منع العلامات ذات الانارة الخلفية

دليل ترميز التصميم الحضري والعمارة

: -30

الخلفية:

نجد من المظهر المرأى لإشارات الشارع وللعلامات التجارية ضمن المناطق التراثية في المحرق و المنامة أنها غالباً ما تكون غير منسجمة , وغير ذات جاذبية بصرية , أو غير موجودة . و ليس هناك كذلك مؤشرات بصرية تدل على أنها مناطق خاصة بالتراث .

التطبيق:

1- يجب أن تكون الإشارات الطرقية ضمن المنطقة الخاضعة للصيانة ذات خلفية بنية اللون و الكتابة باللون الأبيض و بذات الخط المعتمد حالياً في إشارات التراث الوطني . هذا هو ذات المعيار للإشارات الطرقية في الكثير من المناطق في العالم في المناطق الخاضعة للصيانة و من الممكن تمييزها بسهولة و بسرعه من قبل الزوار .

2- جميع الإشارات التجارية الجديدة على جميع المباني الموضوعة على طول الطرق غير التجارية يجب أن يتم طلاؤها على الخشب و ان تكون مضاءة من الأمام . و كحل بديل , يمكن وضع الأحرف الفردية على سطح الواجهة . ليس هنالك علب ناتئة , ومن المسموح وضع الإشارات المضاءة من الخلف . و ينطبق هذا على جميع المباني , ليس فقط تلك ذات التصميم و الإنشاء التراثي .

3- إن حجم وتموضع الإشارات , إلى جانب تصميم و نمط الإضاءة يجب أن يكون بالتوافق مع التركيبة المرئية الإجمالية للواجهة .

4- يجب أن يتم تشجيع التنوع و روح الابتكار في الإشارات , ولكن على أن تكون ضمن الإطار العام المسموح به .



STREET SIGNS العلامات الطرقية والإشارات الدالة

31- Building Elements: Shading of Roof Terraces

Background:

Often light metal or other materials have been used to construct structures on roof terraces to provide shade. This has in many cases taken no regard of the composition of the façade and has led to the spoiling of the visual appearance of the building.

Implementation:

1- Shading devices may be used on the roof terraces. These may take the form of suspended canopies made of canvas or any other suitable fabric. These canopies may be hung from existing rooms on the roof terrace, or from timber posts of an appropriate dimension fixed to the roof terrace. Care must be taken so that the attaching of the posts to the roof terrace surface does not cause any damage that may lead to leaks during rain. The posts are to be painted a traditional brown color. The color of the fabric may be of any solid color, no patterns are allowed. Small openings within the fabric are allowed in order to lessen the wind pressure exerted.

2- Metal or plastic roof coverings used to shade a roof terrace are prohibited, and if exist, must be removed.



Metal Roof Structures Spoil Appearance

هياكل التسقيف المعدنية تفسد المظهر

دليل ترميز التصميم الحضري والعمارة

-31 :

الخلفية:

تم في بعض الأحيان استخدام معدن خفيف أو مواد أخرى لإنشاء هياكل على فسات السطح لكي تقوم بتأمين الظل . هذا وفي كثير من الحالات قد تم من دون الأخذ بعين الاعتبار لتركيبه الواجهة مما أدى لإفساد المظهر المرأى للمبنى .

التطبيق:

1- يمكن أن تستخدم أدوات التظليل على فسات السطح . وقد يتخذ هذا شكل سقف معلق مصنوع من قماش القنب أو أي نوع آخر ملائم من القماش . من الممكن أن يتم تعليق هذا القنب على غرف موجودة على فسة السطح , أو على أعمدة خشبية ذات أبعاد ملائمة مثبتة على فسة السطح . يجب أخذ الحذر عند تثبيت الأعمدة على السطح بحيث لا تتسبب بأي ضرر قد يؤدي إلى التسريب خلال المطر . يجب طلاء الأعمدة باللون البني الترابي . لون القماش من الممكن أن يكون أي لون جامد . ومن غير المسموح استخدام النقوش . من المسموح وجود فتحات صغيرة خلال الأقمشة بغرض تخفيف ضغط الرياح .

2- من الممنوع استخدام أغطية من المعدن أو البلاستيك للأسطح بغرض توفير الظل لفسة السطح , وفي حال وجودها فإنه من الواجب إزالتها , لكونها تفسد المظهر العام للمبنى .



Canvas Awnings تغطيات بالقماش تفسد المظهر



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32- Building Elements: Walls

Background:

Walls transfer the load of the building to the foundation. In order to be economical with building materials, traditional buildings evolved from using thick solid walls to a skeleton grid system

employing major and minor piers spaced at even intervals, tied together with beams at various levels with thin recessed panels filling the spaces in-between. Sometimes these panels were split to create Badgir, allowing breezes to enter the rooms behind.

This structural grid system was often left to express itself honestly, other times, particularly at the ground level; the panels were placed towards the front of the pier to create a flush exterior face, while being recessed on the upper levels.

Windows were substituted for the panels where needed, mostly in the upper floors due to issues of privacy, usually filling the entire space between pier and beam. The play of solid to void and of flush to recess give these traditional buildings a three-dimensional quality through their massing and the effects of light and shadow.



Implementation:

- 1- On buildings of traditional construction, it is to be encouraged to repair existing walls using traditional materials and methods where they have been found to be damaged, or altered through the use of non-traditional materials.
- 2- Walls of new buildings and alterations to existing buildings must follow the design rules described below in order to create a harmonious relationship within the protected areas.



دليل ترميم التصميم الحضري والعمارة

: -32

الخلفية :

تقوم الجدران بتحويل عبء المبنى على الأساسات . وبغرض التوفير في مواد البناء , فإن المباني التراثية تقوم من إنشاء جدران صلبة رقيقة على نظام شبكة هيكلية تقوم بتوظيف الدعامات الرئيسية والثانوية المتوضعة ضمن أبعاد متساوية , و مترابطة مع بعضها البعض من خلال عوارض عند مستويات مختلفة مع ألواح سميكة لسد الفراغات الموجودة . في بعض الأحيان كان قد تم فصل هذه الألواح بغرض إنشاء ملاقف الهواء (البادكير) , الذي يسمح للهواء بالدخول للغرف الخلفية .

غالباً ما كان نظام شبكة الإنشاء هذا يترك ليعبر عن ذاته بشكل صريح , وفي بعض الأحيان , وبشكل خاص في الطوابق الأرضية , كانت توضع الألواح أماماً مقابل الركائز لصنع ساتر أمامي خارجي , فيما تم ترك الفجوات في الطوابق العلوية .

تم إستبدال النوافذ بالألواح حيثما كانت هنالك الحاجة إليها , وفي الغالب في الطوابق العلوية بداعي موضوع الخصوصية , وكانت العادة تقضي بملئ كامل المساحة بين الركيزة و الدعامة . إن تطبيق المواد الصلبة لملا الفجوات يعطي المبنى التراثي جودة البعد الثلاثي من خلال تكتلها و تأثيرها على الضوء و الظل .

التطبيق :

1- على المباني ذات الهيكل التراثي , من الموصى به القيام بإصلاح الجدران الموجودة من خلال استخدام طرق و مواد تراثية على المناطق المتضررة , أو القيام بتعديلها باستخدام مواد غير تراثية .

2- يجب أن تتبع الجدران في المباني الجديدة و التعديلات على المباني الموجودة تعليمات التصميم الموصفة لاحقاً بغرض خلق علاقة انسجام ضمن المناطق المحمية .



Design Rules: Walls

Walls consist of the structural piers and beams. Between these elements, panels are placed either flush with the exterior, flush with the interior (creating recesses towards the exterior), or positioned in-between. Walls (piers, beams and panels) of new buildings may be of traditional coral stone, or of modern materials such as block work, reinforced concrete, or even pre-cast concrete panels. The exterior must have a smooth render finish of a suitable type and depth to avoid cracking due to different thermal properties between the wall material and the render; this includes joints between concrete panels. The render is to be painted white or a suitable earth tone that blends in with the neighboring buildings.

Design Rules: Panels

Panels may be of three types:

- 1) undecorated, or
- 2) Badgir.

1- Undecorated:

These panels are to have a smooth render finish.



2- Badgir: Similar to those on roof terraces, Badgir were often used in the ground level and upper levels instead of windows for reasons of privacy but still allowing the room to receive cooling breezes. Badgir are similar to undecorated panels except that the panel is split in two horizontally. The upper panel is flush with the inside face of the masonry piers, the lower panel is placed forward of the upper panel so that an air gap of approximately 15 centimeters exists between them. The panels' height overlaps one another by approximately 15 centimeters. Timber slats which could be opened or closed depending upon the weather were usually installed on the inside of the air gap between the panels.



إرشادات التصميم: الجدران :

تتألف الجدران من الركائز و الدعامات الإنشائية . وبين هذه العناصر , توضع الألواح إما بشكل ملاصق و مستوي على السطح الخارجي , أو بشكل ملاصق و مستوي على السطح الداخلي (مشكلة لفجوات باتجاه السطح الخارجي) , أو أن توضع في الوسط بين الداخل و الخارج . قد تكون الجدران (الركائز, الدعامات و الألواح) للمباني الجديدة من الحجر المرجاني التراشي , أو من المواد الحديثة كالبلوك, الإسمنت المسلح , أو حتى من الألواح الإسمنتية المسبقة الصنع . يجب أن تكون الأسطح الخارجية مطلية بطبقة ناعمة من نوع وسماكية ملائمة لتجنب أي تشقق تبعاً للتغيرات الحرارية بين مواد الجدار و الطلاء ; وهذا يشمل كذلك الوصلات بين ألواح الإسمنت . يجب الطلاء باللون الأبيض أو لون آخر مناسب و منسجم مع المباني المجاورة .



إرشادات التصميم : الألواح :

قد تكون الألواح من نمطين اثنين : (1) غير مزخرفة (2) ملاقف الهواء (البادكير) .

(1) غير المزخرفة : يجب أن يتم طلاء هذه الألواح بحيث يصبح سطحها أملساً .

(2) ملاقف الهواء (البادكير) : وهو مشابه لتلك التي على فسات السطح , كثيراً ما تم إستخدام البادكير في الطوابق الأرضية و الطوابق العلوية كبديل عن النوافذ بداعي الحصول على الخصوصية , إلا أنه لا يزال يسمح لأن تستقبل الغرفة للهواء المنعش . يشابه البادكير للألواح غير المزخرفة غير أن الألواح مفصولة إلى جزئين بشكل أفقي . اللوح العلوي ممثلي بركائز المبنى , و السفلي موضوع امام اللوح العلوي لذلك فهناك فجوة من الهواء بمقدار 15 سم بينهما . تتداخل الألواح بالتتابع بارتفاع الواحد عن الآخر بمقدار 15 سم . الرفات الخشبية القابلة للفتح و الإغلاق تبعاً للطقس كانت عادة ما توضع بداخل الفجوة الهوائية بين الألواح .

إرشادات التصميم : التزيين :

1- و بهدف إحياء التعبير الجامدة لهيكل الواجهة , فقد تم تطوير العديد من طرق الزخرفة ; لبعضها أغراض زخرفية فقط , و لبعضها إضافة لمظهرها الجذاب لديها تطبيقات تقنية .

2-تجري أعمال الزخرفة و الديكور على الواجهات أحياناً من خلال إجراء تجويفات خارجية . تأخذ هذه الزخارف شكل الجيصين أو الأقواس الجيسية لتصاميم مختلفة .

3- عنصر تزييني آخر هو الجبس المنحوت أو ألواح الجيصين المجوف ضمن الجدار و في مواضع مختلفة . وغالباً ما تكون هذه الألواح قد وُضعت و على مستوى عالٍ في جدار رقيق , سامحة للهواء بالعبور من خلال تصميم معقد وللدخول إلى الغرفة التي وراءه . من المشجع استخدامها , ومن الممكن إنشاءها باستخدام أية مادة ملائمة مشابهة للجبس أو الجيصين .

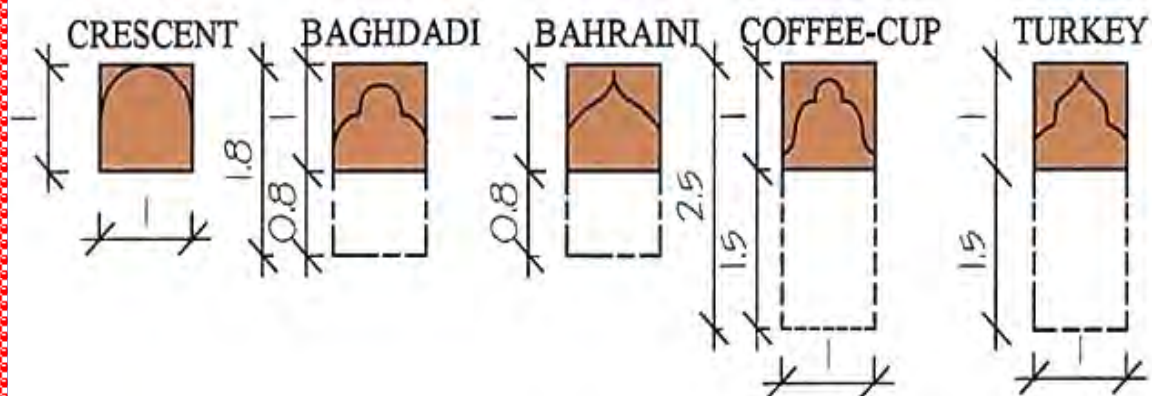


Design Rules: Decoration:

In order to relieve the rigid structural expression of the façade, various methods of ornamentation were developed; some having only a decorative use, others in addition to their visual appeal had a technical function.

1. Decoration on the façade often occurred within external recesses. This decoration took the form of plaster or gypsum arches of various designs:

2- Another decorative element is carved plaster or gypsum panels recessed into the wall at various locations. Often, these panels were inserted at high level into a thin wall, allowing air to pass through their intricate design and enter the room behind. Their use is encouraged, and may be constructed out of any suitable material resembling plaster or gypsum.



SOURCE FOR TEXT AND DRAWINGS: ASSISTANT AGENCY FOR PLANNING
المصدر: الوكالة المساعدة للتخطيط — البلديات

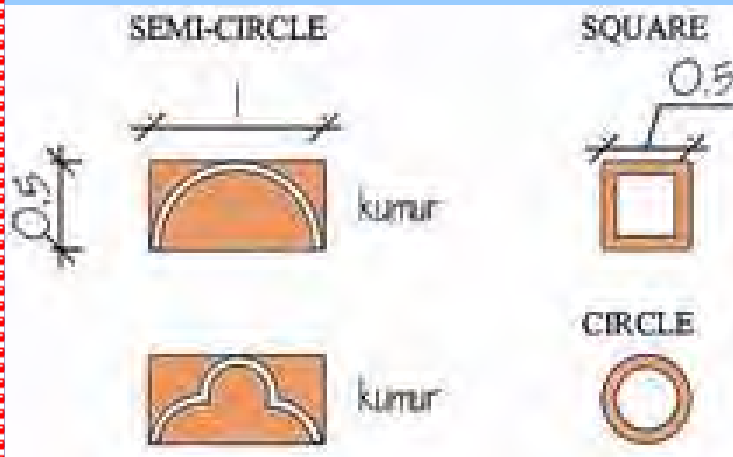


إرشادات التصميم : التزيين :

و بهدف إحياء التعبير الجامدة لهيكل الواجهة , فقد تم تطوير العديد من طرق الزخرفة ; لبعضها أغراض زخرفية فقط , و لبعضها إضافة لمظهرها الجذاب لديها تطبيقات تقنية .

1-تجري أعمال الزخرفة و الديكور على الواجهات أحياناً من خلال إجراء تجويفات خارجية . تأخذ هذه الزخارف شكل الجبس أو الأقواس الجبسية لتصاميم مختلفة .

2- عنصر تزييني آخر هو الجبس المنحوت أو ألواح الجبس المجوف ضمن الجدار و في مواضع مختلفة . وغالباً ما تكون هذه الألواح قد وُضعت و على مستوى عالٍ في جدار رقيق , سامحة للهواء بالعبور من خلال تصميم معقد وللدخول إلى الغرفة التي وراءه . من المشجع استخدامها , ومن الممكن إنشاءها باستخدام أية مادة ملائمة مشابهة للجبس أو الجبصين .



SOURCE FOR TEXT AND DRAWINGS: ASSISTANT
AGENCY FOR PLANNING

المصدر: الوكالة المساعدة للتخطيط — البلديات

Manual of Urban Design and Architecture

33- Building Elements: Windows and Shutters

Background:

Windows and their shutters are important elements of the façade, their design and proportions determine the rhythm and appearance of the building. Many of the windows and shutters of traditional buildings are in a state of disrepair, altered by the insertion of wall mounted air conditioning units, or have in fact been removed and the openings filled in with non-traditional materials.



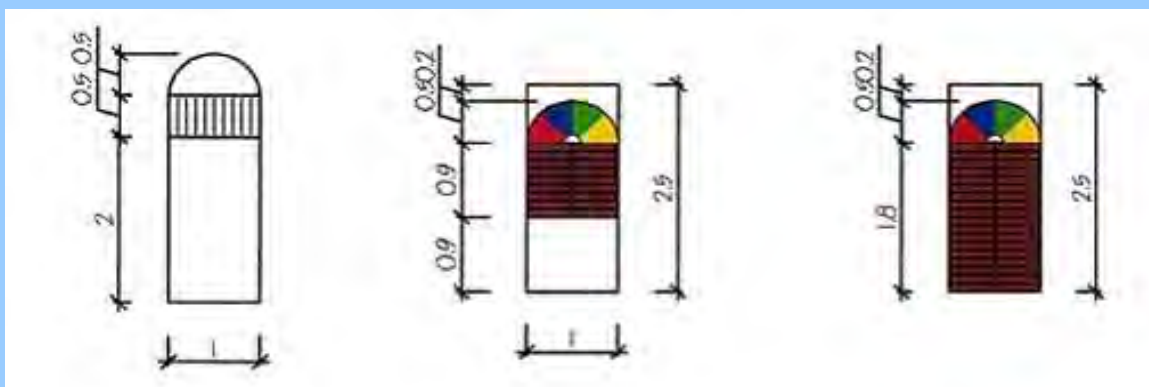
Implementation:

- 1- It is to be encouraged to repair existing windows and shutters using traditional materials and methods, this includes ironmongery. Where they have been removed, windows and shutters similar in design, material, and color to the original should be installed. Formerly windows were without glass. With modern air conditioning, it is acceptable to insert clear glass in the window to prevent the escape of cool air.
- 2- Windows and shutters to new buildings and alterations to existing buildings must follow the design rules described below.

Design Guidelines: Windows

Windows are of two types: 1) normal and 2) fan lights.

- 1- Windows are to be constructed of timber and painted/stained a traditional brown color. Non-timber window frames are prohibited. The proportion of window openings must be either square or vertical; typically the height is two times the width. A deep reveal to provide shade is recommended.



دليل ترميم التصميم الحضري والعمارة

: -33

الخلفية :

تعتبر النوافذ و سواترها من العناصر الهامة في الواجهه , حيث يحدد تصميمها و توزيعها تناغم و مظهر المبنى ككل . العديد من النوافذ و السواتر في الأبنية التراثية في حالة تحتاج للترميم , قد تم تعديلها من خلال إدخال وحدات التكييف في الجدار , أو أنه قد تم إزالتها وملء الفراغ المتخلف عن ذلك بمواد غير تراثية .



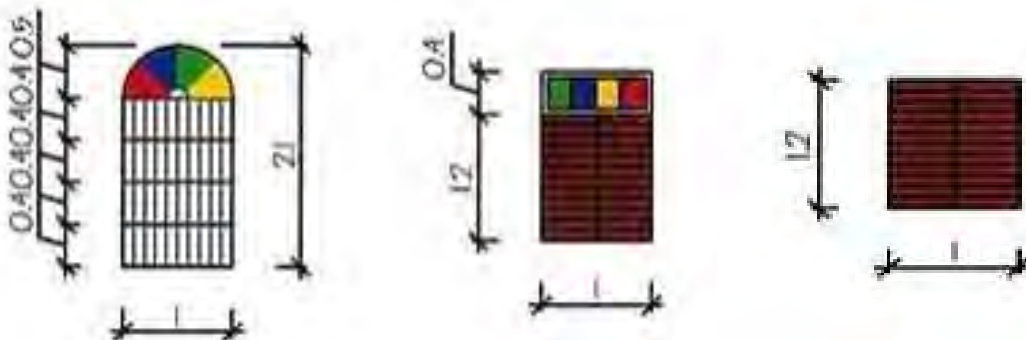
التطبيق :

- 1- من الموصى به أن يتم إصلاح النوافذ و السواتر الموجودة باستخدام مواد و طرق تراثية , وهذا ينطبق كذلك على الأجزاء المعدنية . وحيث قد تمت إزالتها , فيجب تركيب نوافذ وسواتر مشابهة في التصميم , المواد , و اللون مكانها . في السابق كانت النوافذ بدون زجاج . ومع وجود المكيفات الحديثة , فإنه من المقبول وضع زجاج صافي في النوافذ بغرض منع تسرب الهواء البارد .
- 2- نوافذ و سواتر المباني الحديثة و التعديلات على المباني الموجودة يجب أن تتبع قواعد التصميم الموصفة فيما يلي .

إرشادات التصميم : النوافذ :

للنوافذ نوعان : (1) عادية و (2) نافذة مروحية .

- 1- يجب صنع النوافذ من الخشب و أن يتم طلاؤها/تلوينها باللون البني التراثي . ويمنع استخدام إطارات النوافذ غير الخشبية . توزيع فتحات النوافذ يجب أن يكون إما مربعاً أو شاقولياً ; و نموذجياً فإن الارتفاع يكون ضعفي العرض . ومن الموصى به أن يكون مقطع النافذة عميقاً لتوفير الظل .



- 2- Windows may be combined with overhead semi-circular fanlights.
- 3- Fan Lights may be placed above doors and windows, and are to be semi-circular in form. Fan lights may contain clear or colored glass; traditional glass colors are red, yellow, green, and blue. Traditional types of fan lights are described below:



AL BAYTHAWI



AL NAJMAH



AL WARDEH

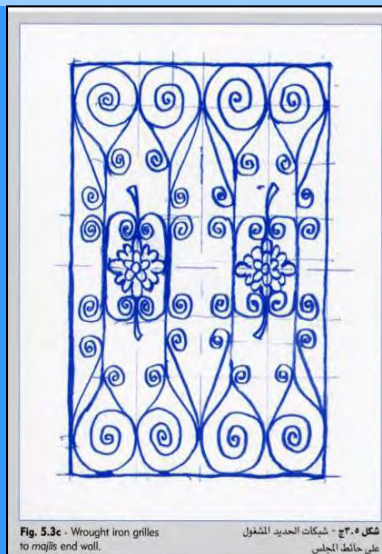
SOURCE FOR TEXT AND DRAWINGS: ASSISTANT AGENCY FOR PLANNING
المصدر: الوكالة المساعدة للتخطيط — البلديات

Design Guidelines: Window Shutters

Window shutters provided visual privacy as well as protection from direct sunlight. They may be constructed of timber; painted or stained the same color as the window frames. They may be simple horizontal louvers, or may be of a decorative pattern. Timber shutters are to be fixed to the interior of the window reveal.

Design Guidelines: Ironwork Window Screens:

Iron window screens provide protection from entry from lower floors, and prevent children from accidentally falling out of upper storey windows. Such screens may be of iron to a decorative traditional pattern or simple bars in a vertical format, painted black. Ironwork screens are to be fixed to the exterior reveal and be flush with the exterior façade. Ironwork screens can be combined with timber shutters as illustrated.



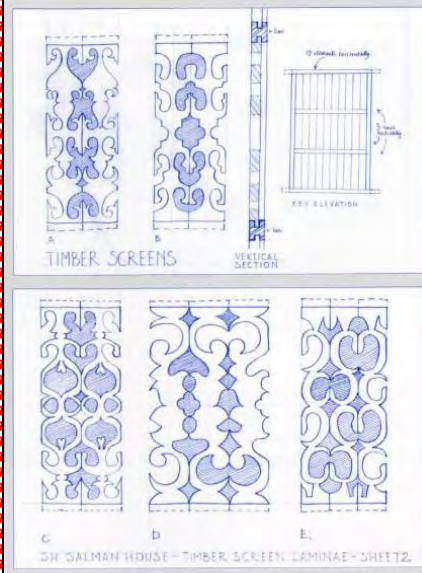
IRON WORK COMBINED WITH TIMBER SHUTTER

أعمال الحديد الممزوجة بالقواطع الخشبية

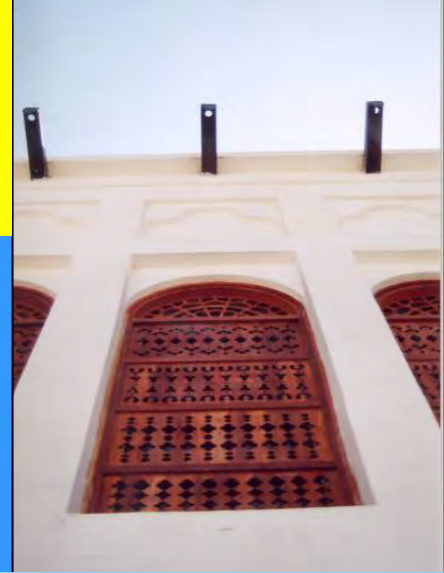
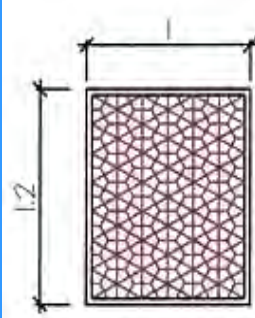
NON TRADITIONAL STYLE PROHIBITED

لا يمنع أي طراز تقليدي

- 2- قد تكون النوافذ مندمجة مع مراوح نصف دائرية .
 3- قد توضع النوافذ المروحية فوق الأبواب و النوافذ , وتكون بشكل نصف دائري . قد تحتوي النوافذ المروحية على زجاج صافي أو ملون ; ألوان الزجاج التراثية هي الأحمر والأصفر والأخضر و الأزرق . والأنماط التراثية للنوافذ المروحية موصفة فيما يلي :



SOURCE FOR TEXT AND
DRAWINGS:
ASSISTANT AGENCY
FOR PLANNING
المصدر: الوكالة المساعدة
للتخطيط — البلديات



إرشادات التصميم : سواتر النوافذ :

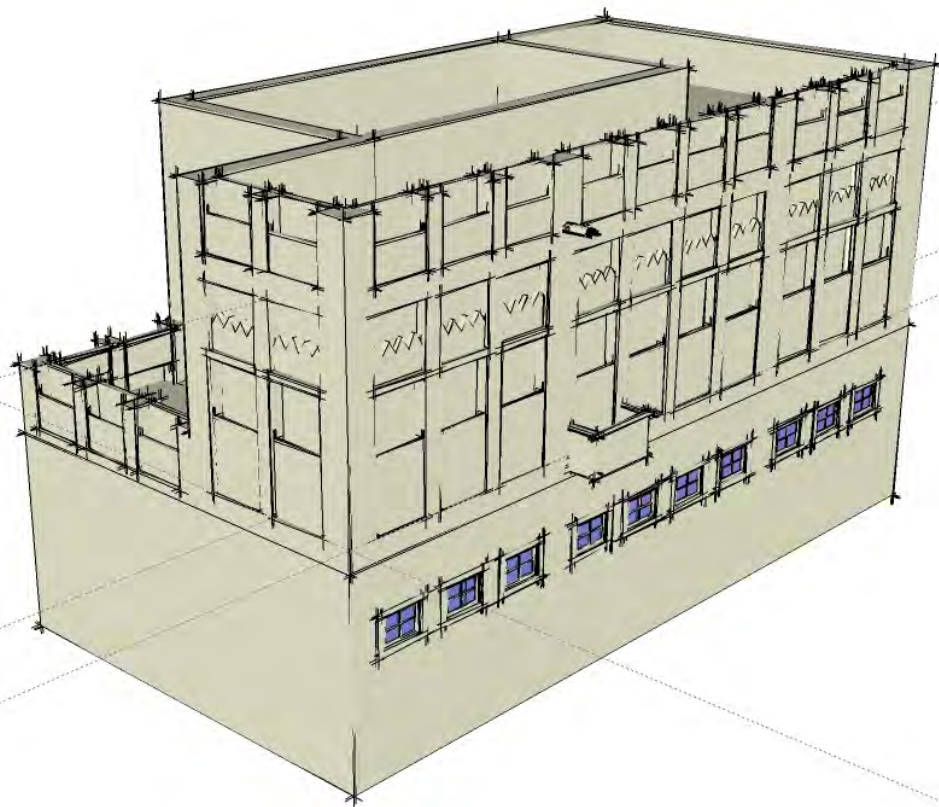
تؤمن سواتر النوافذ الخصوصية البصرية إضافة إلى الحماية من ضوء اشعة الشمس المباشرة . ومن الممكن صنعها من الخشب ; المطلي أو الملون بنفس لون إطار النافذة . قد تكون بسيطة مع إنحناء أفقي , أو بنموذج زخرفي . ويتم تثبيت السواتر الخشبية من داخل مقطع النافذة .

إرشادات التصميم : حواجز النوافذ الحديدية :

تؤمن حواجز النوافذ الحديدية الحماية من الدخول من الطوابق الأدنى , كما تمنع الأطفال من الوقوع بالخطأ من نوافذ الطوابق العليا . حواجز كهذه قد تكون من الحديد ذو الزخرفة التراثية أو أن تكون ذات طابع بسيط و بشكل قضبان شاقولية , مطلية بالأسود . تثبت الحواجز الحديدية على المقطع الخارجي بشكل مستوي مع الوجهه الخارجية . ومن الممكن أن تترافق الحواجز الحديدية بسواتر خشبية كما تم التوضيح سابقاً .



IRON WORK COMBINED WITH TIMBER SHUTTER
أعمال الحديد الممزوجة بالقواطع الخشبية





United Nations
Development Program



Kingdom of Bahrain



Ministry of Municipalities
and Agriculture Affairs

مشروع
بناء القدرات لتحسين الإدارة الحضرية
مشاريع التصاميم الحضرية للمناطق التقليدية في البحرين
المرحلة الأولى: الاستراتيجيات والسياسات
دليل 4

الترميم

**Capacity-Building for Enhancement
Of Urban Governance**
Urban Design Projects
for Traditional Areas in Bahrain
Stage One: Strategies & Policies

**Manual 4
Restoration Codes**

February 2006

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8-3-2

Restoration Code

1 - Executive Summary

In order to preserve the historic and significant built fabric within the historic zones in the cities of Manama and Muharraq, I am proposing three sets of principles and strategies. The first is shaped according to the different types of intervention permitted to various categories of significant buildings.

The building categories are extracted from the results of the prospective survey (whose details are presented in the reports of the Zoning and of the IT consultants). The aim of the first set of principles/strategies is to establish a long-term administrative framework that would assist the authorities to control and guide the preservation activities in the significant buildings of the two cities.

The second set offers selected technical measures and generic specifications that should be followed in specific type of localized interventions that are currently common. The hope in this second set of principles/strategies is to avoid some common practices and interventions that proved to producing negative effects on the historic fabric.

The second set of principles/strategies, therefore, offer technical alternatives that would provide, from one hand, results similar to the ones wished by the users, and, from the other hand, suit the historic fabric of the significant building. The third set of principles is shaped to deal with the built fabric in the scale of the two cities in relation to each other, and in relation to their various historic phases. This set is concerned to link the built fabric that is about to be preserved through the first two sets of principles/strategies with the memory and the meanings of their existence. The third set is therefore an important tool to establish the link between the tangible and the intangible significant aspects, and to establish a comprehensive representation of the two in the parameters of the two historic cities.

The preservation of the significant built fabric of the cities of Manama and Muharraq shall be sought through a wide range of Policies/Strategies, hence the number of those policies and strategies (2.1.1-2.1.8; 2.2.1-2.2.19; 2.3.1-2.3.8) proposed here. More of these policies and strategies could be developed if detailed specifications are required. The purpose behind proposing a number of approaches is to emphasize on the scale of the project which deals with two historic zones in the most recognized cities in Bahrain. Therefore, the prospective preserved buildings, elements, and memories are all gathered through a certain philosophical preservation line, but manifested through a variety of solutions, shapes, materials and thoughts. The cities, including its historic zones shall not look monotonous after preserving their buildings, but vivid with ideas that are well culturally rooted and compatible with the history of the place. The mix of uses, activities, shapes of spaces, uneven street, building styles, conservation

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In addition to the proposed set of policies and strategies, this report suggest a series of pilot project, whose implementation would demonstrate the value of the approach, and would also help in assessing the suggested techniques and philosophies.

The report also includes a useful library for traditional building materials and techniques. This section could be the basis of a more in-depth study on the issue, and consequently the prospective revitalization of traditional building crafts which will be an important pillar that will support this project.

An review of all the consulted literature was an important tool to shape the understanding and the ideas formulated in this report. It is for that reason, that an annotated bibliography for all the consulted published materials is included in the report, highlighting in each the topics that are related to conservation/rehabilitation of significant buildings.

Finally, a list of all the site visits conducted under this project during its November 1005 and January 2006 missions, and the contacts I was able to gather is included in this report. It is important for the reader to know how the ideas presented here are formulated throughout a selection of visited buildings and sites, and the discussions with selected personnel and organizations. There might be other sites, buildings never visited during the two working missions to Bahrain, and other related professional and organizations that the limited time of site investigation did not allowed to get to. If this is the case there might be some holes and/or incompleteness in the investigation and the discussion which needs to be accounted for while reading and/or implementing any of the ideas and information presented in



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Restoration Code: 2.Three levels of principles/strategies

2.1.Principles/strategies according to types of interventions identified from survey

The first set of principles/strategies proposed for the preservation of significant buildings in the Manama and Muharraq are shaped according to the results of the prospective survey. This set is the one that will be widely used as it targets a large percentage of significant buildings. It is targeting those buildings which are classified in the survey as significant, and which were further investigated by surveyors to check on specific qualities, such as the set of historic architectural elements, the courtyard and its status, the use of the upper floor, the recent transformation that the building witnessed, and an assessment on the compatibility of the current use with the historic fabric. More importantly, the detailed investigation of the survey indicates the level of significance assigned for each building, i.e. high, medium and low, which is a parameter that describes how important is the building from various viewpoints such as its urban status, its architectural quality, its conditions, the impact the user of the building have in its surrounding neighborhood, and others. The set of principles/strategies entails type of intervention required to target different cases. The cases are identified by two main criteria:

1) Results extracted from the survey's analysis, through its GIS system. The cases are as following:

- High significant building in good condition
- High significant building in bad condition
- Medium significant building in good condition
- Medium significant building in bad condition
- Low significant building in good condition
- Low significant building in bad condition
- Vacant lots with significant historic remains.

It should be explained here that “good condition” includes “Good” and “Ordinary” of the survey sheet, and that “bad condition” includes “Bad” and “Ruin.” The purpose of merging those fields here is to minimize the mistakes that the surveyors would make since the judgment is to a large extent subjective, and based a quick evaluation (but of course would help in the zoning and planning issues). Similarly, the buildings which are identified as “high” and “medium” significance will be considered here as “high significance,” as oppose to the ones identified as “low significance.” The reason is to narrow down any mistake that the surveyors may do in confusing a highly significant building with a “medium significance.” It is mandatory to conduct detailed condition survey in many, if not all, of the buildings which are listed as significant in order to identify their detailed level of significance and their exact level of condition before assigning a proposed interventions.

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2) Permitted intervention identified for buildings and for vacant plots:

This is a field that will be set according to many parameters such as the master plan, the zoning, the codes, and others. The legal aspects, the social impact, and the economic values of the intervention will also have important say in determining the type of intervention required. In order to simplify the matter, it would be enough to deal with two types of intervention that cover all other levels.

Buildings:

The two tables below summarize the different levels permitted to significant buildings according to their identified conditions and the significance. It should be noted that “conservation” is not applicable as a permitted intervention in the cases of low significance buildings. The reason for that is to respect the general approach in this project, which is to generally promote rehabilitation, and to strengthen the possibility to re-use the large number of significant buildings that are located within the cities of Manama and Muharraq, in order to stress on the notion of a “living” city, and to emphasize on the role each of those buildings could play in the development of the local community. It is for that reason that only a very little percentage shall be permitted for conservation projects because conservation tends to cease most of the possible uses and create a type of “museum buildings.” Buildings which are subjects for conservation projects shall, therefore, be carefully selected so that they would complement with a comprehensive zoning, and planning policies/strategies.

CONSERVATION		
Conditions\ Significance	High Significance	Low Significance
Good Condition	(1) ●	NA
Bad Condition	(2) ●	NA

REHABILITATION		
Conditions\ Significance	High Significance	Low Significance
Good Condition	(3) ●	(5) ●
Bad Condition	(4) ●	(6) ●

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	(1) •	
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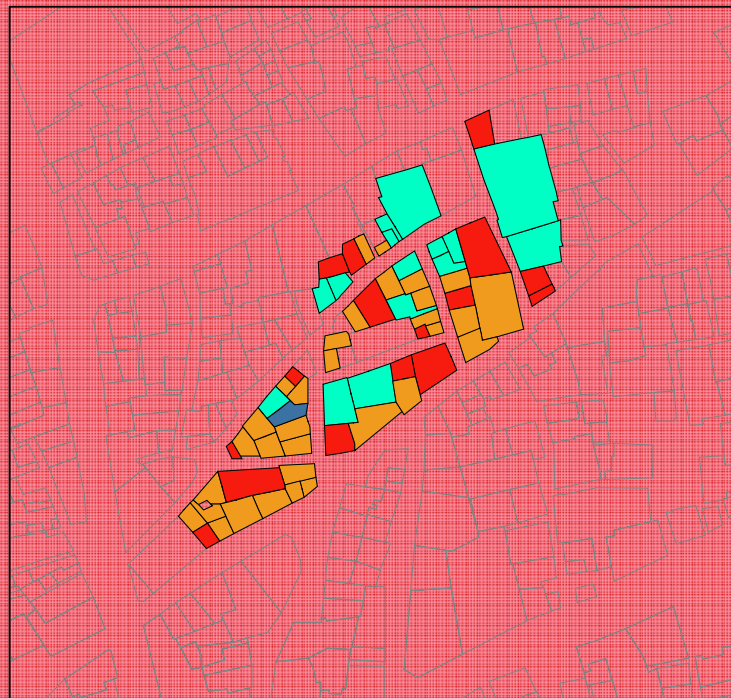
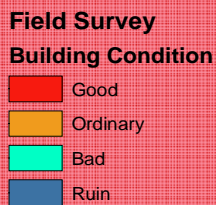
		/
(5)	(3)	
(6)	(4)	

Vacant Plots

As for the vacant properties, the prospective survey is designed to point to those that are holding significant fabric, i.e. remains of a historic wall or remains of a doorway integrated into a newly built fence or a historic tree that was once in an internal courtyard, and others. Two levels of preservation intervention could be permitted in those cases. The first is a total or partial reconstruction of the significant building in the case where zoning and planning principles points to an infill. The second is the conservation of the existing historic remain in the landscape design of the open air area suggested by the zoning/planning principles.

The Survey and Type of Permitted intervention

In order to demonstrate how this strategy could be applied, an area in Manama is selected as an example. This area, which was selected without any preset criteria, was surveyed following to the survey sheet that was specifically designed for this project. More details on how the survey sheet was designed, checked and applied are available in the report on the Zoning, and the one of Information Technology. According to the surveying procedures, the information collected are entered in a GIS system that was designed by the IT consultant. The maps below are the selected results of the survey that would benefit to identify the conservation level permitted for each significant building in the surveyed area. The maps used in this case are the ones that show the conditions of the buildings and the level of significance identified for each.



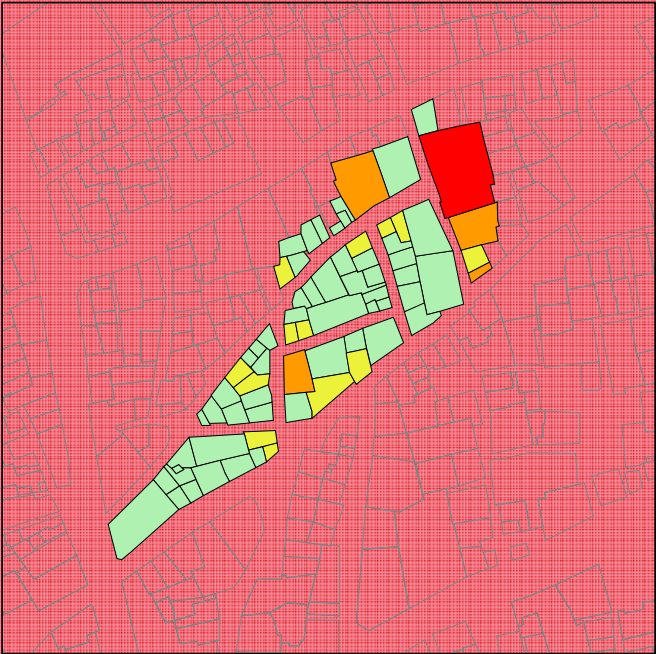
Following the procedures explained above, the buildings which were identified as being “good” and “ordinary” (red & orange) fall in the “good condition” category here. “Bad” and “ruined” (green & blue) buildings fall in the category of “bad condition” category.

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GIS

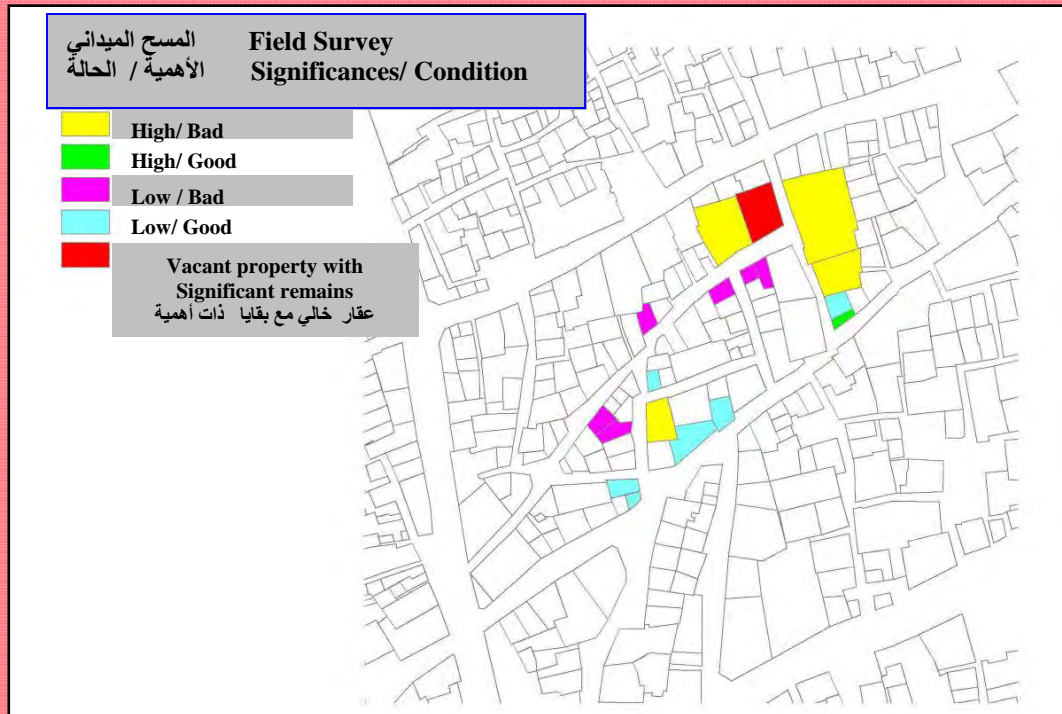
Field Survey
Level of Significance

High
Medium
Low
None



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This map points to the significant buildings identified by red, orange and yellow. The ones which are indicated by red and orange are considered “highly significant buildings”, and those in yellow color are considered “low significance.”



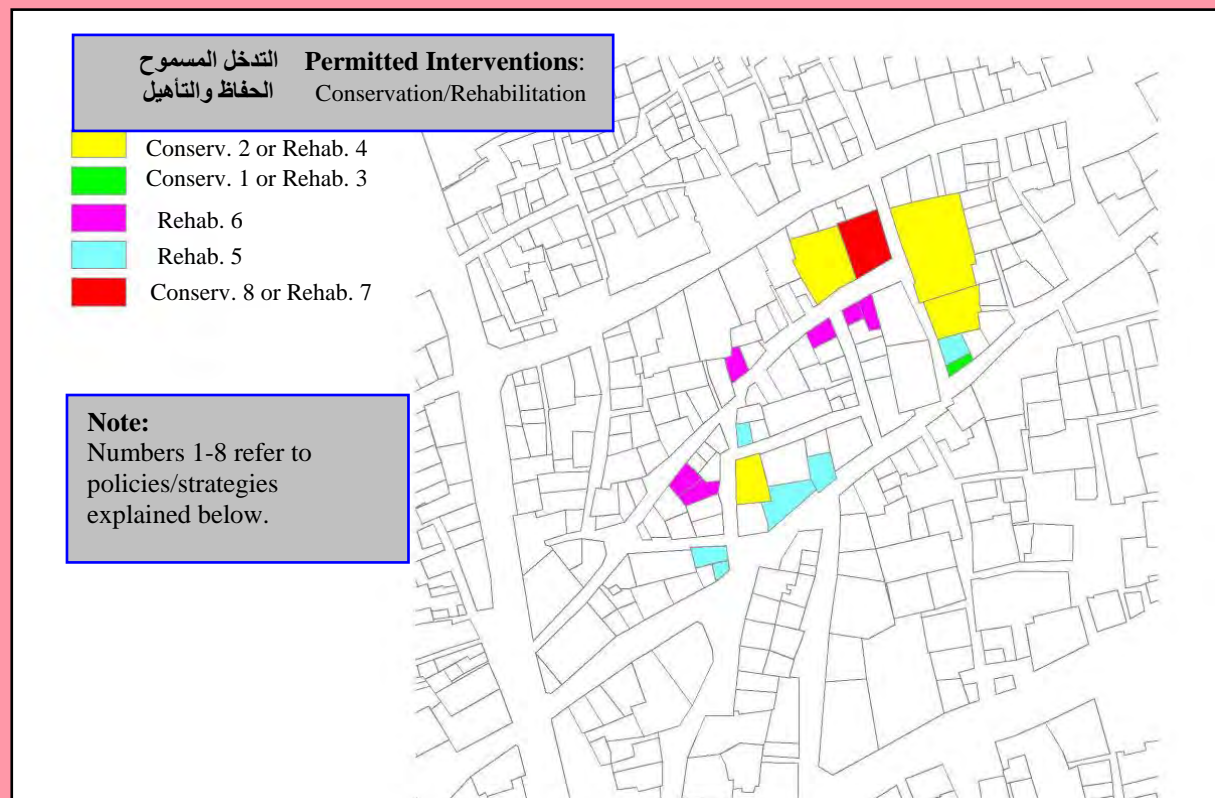
The map above indicates the high significant buildings which are either in good or bad conditions, and the low significant buildings which are either in good or bad conditions. There is only one vacant lot within this survey area where significant historic remains were found. This survey area contains all five possible scenarios that were explained in the above tables, and which are represented in the map below.

The data below are some statistics which could be drawn from the sample survey. These data will be helpful, but certainly not accurately reliable, to point to the magnitude of the intervention of each of principles/strategies that are explained below.

- A total of 71 buildings/vacant plots were surveyed
- 15 buildings/vacant plots were identified as significant (approximately 20%)
- 5 buildings were identified as highly significant buildings (approximately 7 %), 4 of which (approximately 5.5%) are in bad condition, and only 1 in good condition (approximately 1.5%)
- 1 vacant plot was identified as holding significant elements (approximately 1.5 %)
- 12 buildings were identified as low significance buildings (approximately 17%), 4 of which are 6 in bad condition (approximately 8.5%), and 6 are in good condition (approximately 8.5%).



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 5
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 (%1.5) 1 (%5.5
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 4 (%17)
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The map above indicates the permitted interventions for each significant buildings and the vacant plots which contain a significant element. According to the tables presented above, each of those 5 categories is assigned one or two permitted interventions. It should be noted that only one intervention (rehabilitation) is permitted for the buildings which are in low significance, but those which are in bad condition have a policy/strategy that is different than those that were found in good condition (see points 2.1.5, and 2.1.6 below).

This approach is intended in order to strengthen the general approach of the project which seeks a revitalization of the historic zones of Manama and Muharraq while preserving its significance buildings. In the cases of high significant buildings and vacant plots with significant elements, alternatives of principles/strategies are permitted, and a selection between such alternatives is according to the zoning regulations identified to the area (see Report on “*Urban Conservation Zones in Manama and Muharraq*,” by Daniele Pini).

From this sample, the following statistics concerning the conservation/rehabilitation of significant buildings could be inferred:

- 5.5% of the buildings in the survey area are high significance in bad condition and require either conservation or rehabilitation following Policies/Strategies No. 2.1.2, or 2.1.4.
- 1.5% of the buildings in the survey area are high significance in good condition and require either conservation or rehabilitation following Policies/Strategies No. 2.1.1 and 2.1.3.



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- 8.5% of the buildings in the survey area are low significance in bad condition and require rehabilitation following Policy/Strategy No. 2.1.6.
- 8.5% of the buildings in the survey area are low significance in good condition and require rehabilitation following Policy/Strategy No. 2.1.5.
- 1.5% of the buildings in the survey area are vacant plots that are containing significant elements and require either conservation following Policy/Strategy No. 2.1.8, or reconstruction/rehabilitation following Policy/Strategy No. 2.1.7.

Rehabilitation.5

Rehabilitation .6

Rehabilitation.6



Example of the type of intervention permitted for buildings surrounding a little piazza in the survey area. Note that the numbers refer to the 2.1. set of Policy/Strategy explained below.

Policies/Strategies

The following section of the report presents the Policies/Strategies that are shaped according to types of interventions identified from the survey.

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Restoration Code 2: Three levels of principles/strategies

2.1.1 Conservation of Highly Significant Buildings in Good Condition

Background:

A Policy/Strategy that is considered as an alternative to No. 2.1.3. The selection of either one depends on the zoning regulations identified to the area where the building in subject falls. According to the statistical numbers inferred from the sample survey, the buildings where this Policy/Strategy could be applied represents approximately 1.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq.

This Policy/Strategy entails the conservation of the historic fabric, and all architectural and decorative elements, focused archaeology to reveal concealed significant historic layers, and a minimum restoration to complete structural members and/or decorative aspects. An example of the type of buildings that fall into this category are the buildings indicated by the green color in the previous map.

Implementation

- Documenting existing architectural and decorative fabric, and save produced documents in the project archive suggested in this report. Documents shall include written materials, photographs, sales and ownership deeds, comprehensive measured drawings, and the like.
- Conducting a condition survey of each architectural element separately in order to formulate an understanding of the deterioration phenomena and their causes.
Developing recommendations for remedies.
- Conducting analyses on specific deterioration factors; i.e. structural and soil analysis for uneven foundation settlement, material laboratory analysis for material disintegration or color fading and others. Developing recommendations for remedies.
- Identifying all recent interventions and/or modifications that are harming the significant fabric, and restoring original state if possible.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Identifying a use for the building that would be compatible with the zoning regulations and would allow maximum preservation and regular maintenance of the historic fabric, and would limit modifications and restorations. Studying the required utilities and facilities that would support the new use assigned for the building.
Examples of type of uses permitted for such buildings are those that are directed towards cultural activities.
- Evaluating and approving proposed recommendations and/or Principles/Strategies, and implementing approved ones in accordance with the set re-use program.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural elements, building and decorative materials. Periodical assessment of the maintenance plan is required to assure its validity, and to prevent harm to the building.

Reference: Refer to the Zoning Report in order to identify whether this Policy/Strategy (conservation) or the one No. 2.1.3 (rehabilitation) would be applicable to a given case.

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Restoration Code 2: Three levels of principles/strategies

2.1.2 Conservation of Highly Significant Buildings in Bad Condition

Background

A Policy/Strategy that is considered as an alternative to No. 2.1.4. The selection of either one depends on the zoning regulations identified to the area where the building in subject falls. According to the statistical numbers inferred from the sample survey, the buildings where this Policy/Strategy could be applied represents approximately 5.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq.

This Policy/Strategy entails the conservation of the historic fabric, and all architectural and decorative elements, comprehensive archaeology to reveal concealed significant historic layers, architectural elements, and a minimum reversible restoration to complete structural members and / or decorative aspects. Examples of the type of buildings that fall into this category are the buildings indicated by the yellow in the survey map, the ruins of the water house shown below



Ruins of the water house of Sheikha Nora bint Salman, Manama
أثار وأطلال من بيت البئر للشيخة نورا بنت سلمان آل خليفة—المنامة

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House in the Survey Area, Manama

مسكن في منطقة المسح الميداني—المنامة

Implementation

- Documenting existing architectural and decorative fabric, and save produced documents in the project archive suggested in this report. Documents shall include written materials, photographs, drawings, legal documents, and the like.
- Conducting a condition survey of each architectural element separately in order to formulate an understanding of the deterioration phenomena and their causes. Developing recommendations for remedies.
- Conducting focused and pragmatic excavation to complete a comprehensive understanding of the existing structural and its utilities' systems.
- Removing modern incompatible additions, and partially restoring the architectural elements in order to explain their role in the building.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Consolidation existing architectural and decorative fabrics.
- Developing a proper representation of key elements in revealed systems. Through such representations, historic information would be delivered to visitors, and in some cases information panels shall be considered.
- Include the final representation of the building into a cultural circle by transforming it either into a exhibition for a certain cultural theme, or considering it for as an open house for specific periodical time.

Reference

Refer to the Zoning and Legal reports to select between this Policy/Strategy or the one No. 2.1.4 (rehabilitation), and the legal supportive framework to deal with the property.



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Restoration Code 2: Three levels of principles/strategies

2.1.3. Rehabilitation of Highly Significant Buildings in Good Condition

Background:

A Policy/Strategy that is considered as an alternative to No. 2.1.1. The selection of either one depends on the zoning regulations identified to the area where the building in subject falls. According to the statistical numbers inferred from the sample survey, the buildings where this Policy/Strategy could be applied represents approximately 1.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq.

This Policy/Strategy entails the conservation of the historic fabric, and all architectural and decorative elements, focused archaeology to reveal concealed significant historic layers, and the employments of these elements with limited scope modification that supports a rehabilitation project. An example of the type of buildings that fall into this category are the buildings indicated by the green color in the previous map.

Implementation:

- Documenting existing architectural and decorative fabric, and save produced documents in the project archive. Documents shall include written materials, photographs, drawings, sales and ownership deeds, and the like.
- Conducting a condition survey in order to understand the deterioration phenomena and their causes. Developing recommendations for remedies.
- Conducting analyses on specific deterioration factors; i.e. structural and soil analysis for uneven foundation settlement, material laboratory analysis for material disintegration or color fading and others. Developing recommendations for remedies.
- Identifying all recent interventions and/or modifications that are harming the significant fabric, and restoring original state if possible, or substituting harmful modifications with ones that are compatible with the historic fabric.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).

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- Identifying a use for the building that would be compatible with the zoning regulations, would minimize modifications, and would emphasize on the maintenance of the historic fabric. Studying the required utilities and facilities that would support the newly assigned use. A wide range of uses are permitted to rehabilitate those buildings. Only those uses which are not compatible with the historic fabric and its general interior spaces would be disregarded.
- Permitting interior and exterior modifications that are minimum in relation to the surrounding historic fabric, and, by and large, reversible without producing harm.
- Evaluating and approving proposed recommendations and/or Principles/Strategies, and implementing approved ones in accordance with the set re-use program.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.
- Considering an open house for specific periodical time.

Reference:

Refer to the Zoning Report in order to identify whether this Policy / Strategy (conservation) or the one No. 2.1.1 (conservation) would be applicable to a given case.



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Restoration Code 2: Three levels of principles/strategies

2.1.4. Rehabilitation of Highly Significant Buildings in Bad Condition

Background

A Policy/Strategy that is considered as an alternative to No. 2.1.2. The selection of either one depends on the zoning regulations identified to the area where the building falls. According to the statistical numbers inferred from the sample survey, the buildings where this Policy/Strategy could be applied represents approximately 5.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq.

This Policy/Strategy entails the conservation of the selected historic fabric, and architectural and decorative elements, focused archaeology to reveal examples of significant historic layers, a reversible restoration to complete structural members and/or decorative aspects, and minimum changes and modifications that would sustain a rehabilitation program. Examples of the type of buildings that fall into this category are the buildings indicated by the yellow in the survey map.

Implementation

- **Documenting existing architectural and decorative fabric, and save produced documents in the project archive suggested in this report. Documents shall include written materials, photographs, drawings, legal documents, and the like.**
- **Conducting a condition survey of each architectural element separately in order to formulate an understanding of the deterioration phenomena and their causes. Developing recommendations for remedies.**
- **Conducting focused excavation to draw an understanding of the existing structure.**
- **Removing modern incompatible additions, and partially restoring the architectural elements in order to explain their role in the building.**
- **Identifying, and implementing applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).**
- **Consolidation existing architectural and decorative fabrics..**

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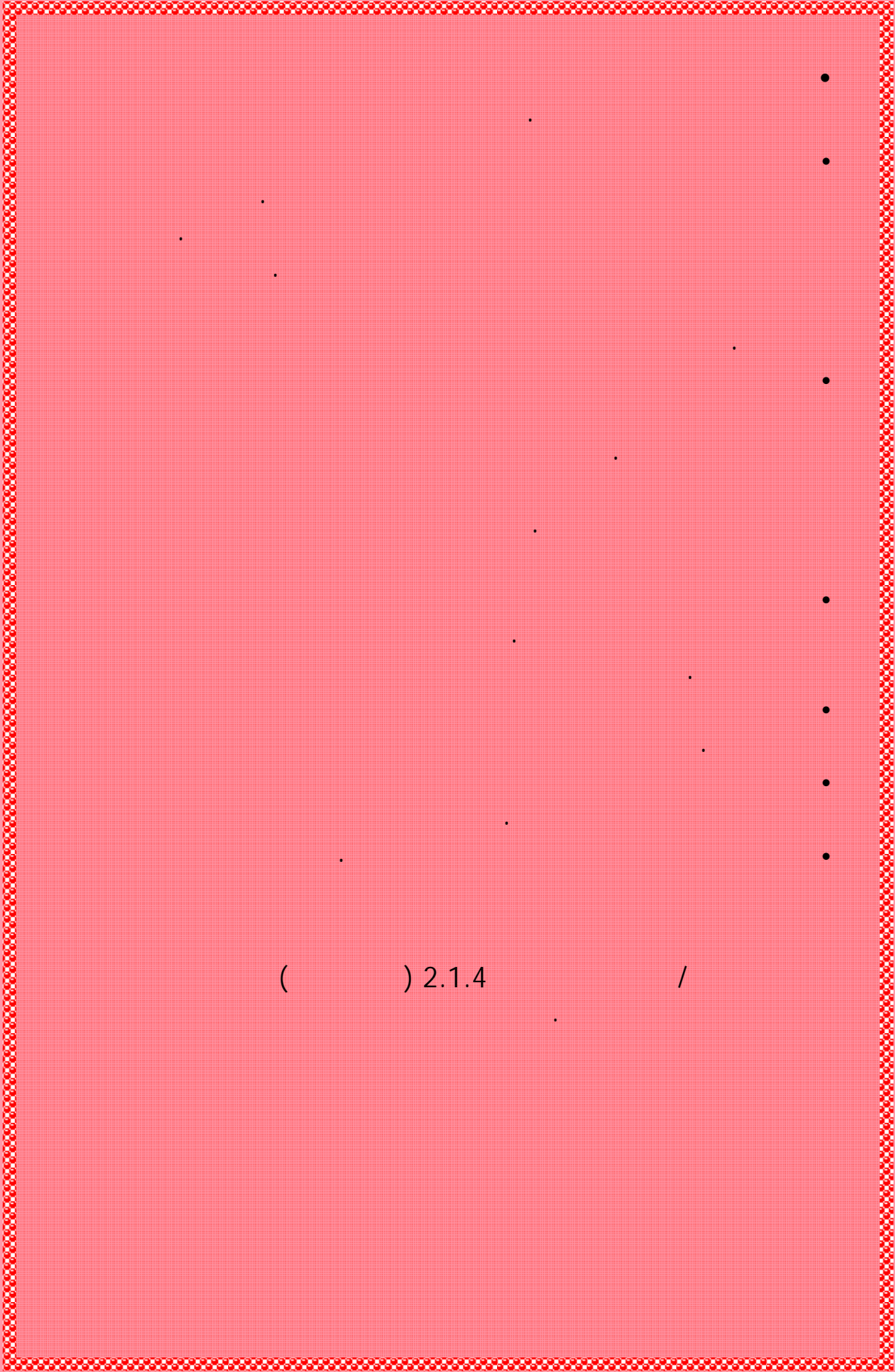
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- Representing samples of the key architectural and decorative elements, through which witnesses of historic phases would be revealed.
- Identifying a use for the building that would be compatible with the zoning regulations, would minimize modifications, and would emphasize on the maintenance of the historic fabric. Studying the required utilities and facilities that would support the newly assigned use. A wide range of uses are permitted to rehabilitate those buildings in the condition if they are compatible with the historic fabric and its general interior spaces.
- Allowing limited reconstruction, modifications, and renovation to meet with the newly assigned use. Interventions shall be reversible, and preferably minimum.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.
- Considering an open house for specific periodical time.

Reference:

Refer to the Zoning and Legal reports to select between this Policy/ Strategy or the one No. 2.1.4 (rehabilitation), and the legal supportive framework to deal with the property.



Restoration Code 2: Three levels of principles/strategies

2.1.5. Rehabilitation of Low Significant Buildings in Good Condition

Background:

According to the statistical numbers deduced from the sample survey, the buildings where this Policy/Strategy could be applied, low significant in good condition, represents approximately 8.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq. They are basically those buildings which contain significant architectural elements, kept in a fairly good condition, and do not exhibit major structural failures.

This Policy/Strategy entails preserving those buildings in their entirety, conserving selected historic fabric, and architectural and decorative elements, removing all harming additions, conducting focused archaeology to reveal examples of significant historic layers, implementing reversible restoration to complete structural members and/or decorative aspects, and minimum changes and modifications that would sustain a rehabilitation program. This Policy/Strategy also incites for ameliorating the position of the buildings in the surrounding environment. Examples of the type of buildings that fall into this category are the buildings indicated by the blue in the survey map.

Implementation:

- Preserving the buildings in their entirety.
- Documenting existing architectural and decorative fabric, and save produced documents in the project archive. Documents shall include written materials, photographs, drawings, sales and ownership deeds, and the like.
- Conducting a condition survey in order to understand the deterioration phenomena and their causes. Developing recommendations for remedies.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Identifying all recent interventions and/or modifications that are harming the significant fabric, removing them and restoring original state if possible, or substituting harmful modifications with more compatible ones.
- Identifying a use for the building that would be compatible with the zoning regulations, would minimize modifications, and would emphasize on the maintenance of the historic fabric. Studying the required utilities and facilities that would support the newly assigned use. A wide range of uses are permitted to rehabilitate those buildings. Only those uses which are not compatible with the historic fabric and its general interior spaces would be disregarded.
- Permitting interior modifications, and to have them, by and large, reversible without producing structural modification or harm.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.

Reference

Refer legal and economic reports to select a framework through which the preservation and the rehabilitation of this type of buildings could be implemented and sustained.

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Restoration Code 2: Three levels of principles/strategies

2.1.6. Rehabilitation of Low Significant Buildings in Bad Condition

Background:

According to the statistical numbers deduced from the sample survey, the buildings where this Policy/Strategy could be applied, low significant in bad condition, represents approximately 8.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq. They are basically those buildings which contain significant architectural elements, but exhibiting structural problems, partially collapses, or they are ruined. This Policy/Strategy entails preserving selected elements of these buildings, not necessarily complete elements, conserving selected architectural fabric or decorative elements, removing all harming additions, implementing reversible restoration to complete structural members and/or decorative aspects, and considering suitable modern additions according to urban, zoning, and building regulations. All designated intervention shall sustain a long-term rehabilitation program. This Policy/Strategy also incites for ameliorating the position of the buildings in its surrounding environment. Examples of the type of buildings that fall into this category are the buildings indicated by the violet in the survey map.

Implementation:

- Preserving selected historic elements in the buildings.
- Documenting existing architectural and decorative fabric, and save produced documents in the project archive. Documents shall include written materials, photographs, drawings, sales and ownership deeds, and the like.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Identifying all recent interventions and/or modifications that are harming the historic fabric recognized for preservation, removing them and partially restoring original state, or substituting harmful modifications with more compatible ones.
- Developing an architectural design where the designated elements are incorporated and highlighted. The design shall be inspired by the historic parameters, but not necessarily imitating it, or following its lines.
- Identifying a use for the building that would be compatible with the zoning regulations. Studying the required utilities and facilities that would support the newly assigned use. A wide range of uses are permitted to rehabilitate those buildings according to zoning regulation. Only those which could harm the preserved historic elements that would be disregarded.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.

Reference:

Refer legal and economic reports to select a framework through which the preservation and the rehabilitation of this type of buildings could be implemented and sustained.

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Restoration Code 2: Three levels of principles/strategies

2.1.7. Total or Partial Reconstruction of Demolished Significant Building

Background:

According to the statistical numbers deduced from the sample survey, the vacant plots where this Policy/Strategy could be applied represents approximately 1.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq. They are basically those empty property which contain some significant architectural elements such as an old entrance gate, remains of a wall, traces of the courtyard, and the like, and they hold special historic value that would interest the street, the neighborhood, the city or even the country. One other parameter to identify such cases is to have enough historic documents (exterior and interior photographs, historic deeds, drawings or sketches, and the like) that would help in the prospective reconstruction. This Policy/Strategy aims to revive a certain memory that would enrich the cultural environment of the cities of Manama and Muharraq through the reconstruction of a specific demolished or collapsed building.

Examples of the type of buildings that could fall into this category are the buildings indicated by the red in the survey map.

Implementation

- Documenting existing architectural and/or decorative architectural elements in the vacant plot, and save produced documents in the project archive. Documents shall include written materials, photographs, drawings, ownership deeds, and the like.
- Conducting comprehensive excavations to reveal foundations that could have been preserved in place after the demolition, and surveying them properly.

House of Mohammad bin Faris before and after intervention. This is an example of this Policy/Strategy (total or partial reconstruction of a demolished significant building. However, the approach is in the reconstruction is different. Many of the historic architectural elements and building materials could have been preserved in place, and reincorporated in the new scheme.



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- Conducting a historic research through which the architecture of the demolished or the collapsed building could be deduced, and some of its elements could be retrieved, i.e. an old doorway that was taken from a demolished building to be employed elsewhere.
- Developing a reconstruction scheme based on findings and incorporating existing and retrieved remains and elements. The scheme shall be inspired by the historic parameters, but not necessarily imitating it, or following its lines.
- Distinguishing newly introduced architectural fabric from the ones preserved in place and the elements that were retrieved and reintroduced.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Identifying a use for the building that would be compatible with the zoning regulations, and that would strengthen the idea of reviving a certain memory through reconstruction.
An example of such approach is the house of Mohammad bin Faris in Muharraq, although the approach and the implementation there are quite different from the ones proposed here. In Mohammad bin Faris, newly introduced architectural fabric overwhelmed the existing fabric.
- Studying and implementing the required utilities and facilities that would support the newly assigned use.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.

Reference

Refer zoning, legal and economic reports to select a framework through which the preservation and the rehabilitation of this type of buildings could be implemented and sustained.

.(2.2.1 2.2.19)

Restoration Code 2: Three levels of principles/strategies

2.1.8. Conservation of significant element(s) integrated In a landscape design

Background:

According to the statistical numbers deduced from the sample survey, the vacant plots where this Policy/Strategy could be applied represents approximately 1.5% of the total number of the existing numbers of Buildings in Manama and in Muharraq. They are basically those empty property which contain some significant architectural elements such as an old entrance gate, remains of a wall, traces of the courtyard, and the like, and they hold special historic value that would interest the street, the neighborhood, the city or even the country. One other parameter to identify such cases is the zoning regulations mandates to keep this plot empty, with no building infill, in order to provide a certain function in the urban environment, such as parking, garden, open air piazza, and the like. This Policy/Strategy aims to revive a certain memory that would enrich the cultural environment of the cities of Manama and Muharraq through the preservation of the significant historic elements that still exist in place. Examples of the type of buildings that could fall into this category are the buildings indicated by the red in the survey map.

Implementation:

- Documenting existing architectural and/or decorative architectural elements in the vacant plot, and save produced documents in the project archive. Documents shall include written materials, photographs, drawings, ownership deeds, and the like.
- Conducting focused excavations to reveal foundations that could relates the existing architectural elements with the once standing historic building.
- Conducting a historic research through which the architecture of the demolished or the collapsed building could be deduced, and some of its elements could be retrieved, i.e. an old doorway that was taken from a demolished building to be employed elsewhere.



An example of some significant elements in a vacant plot
in the survey area.

This vacant plot is identified with a red color in the
survey maps above.

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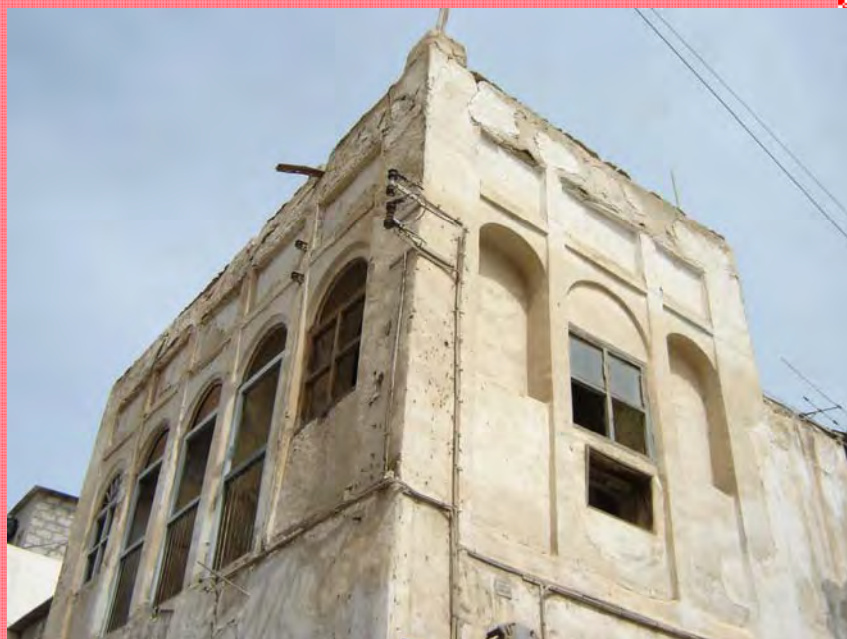
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- Conserving the existing elements in place, and seeking means to abstractly relating them to the building they once belonged to.
- Developing a landscape scheme that would incorporate the conserved elements in the new function of the place, whether it being parking, garden, urban piazza, and the like. It s preferable that the landscape scheme would be inspired by the conserved elements, and would highlight them into their new composition.
- Designing measures that would prevent harming the conserved and exhibited elements. For examples, to prevent water to reach to the preserved historic elements, to prevent users of the space to write graffiti on the preserved elements, and to prevent exposing such elements to crashes and impacts.
- Identifying applicable Principles/Strategies from the list of specific technical interventions of the following section of this report (2.2.1.-2.2.19).
- Identifying a use for the vacant plot that would be compatible with the zoning regulations, and that would strengthen the representation of the conserved open air elements.
- Studying and implementing the required utilities and facilities that would support the newly assigned use for the vacant plot.
- Documenting the process of implementation, and the final product, and save produced documents in the project archive.
- Developing and implementing a maintenance plan for all architectural and decorative elements, and periodically assessing the validity of the maintenance plan.

Reference:

Refer zoning, legal and economic reports to select a framework through which the preservation and the rehabilitation of this type of buildings could be Implemented.



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Restoration Code 2: Three levels of principles/strategies

2.2.. Principles/Strategies for specific technical interventions

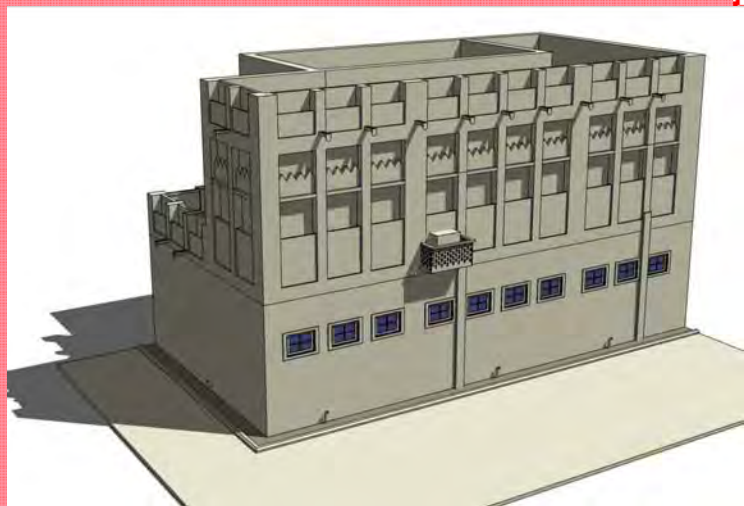
Introduction:

This set of principles/strategies targets the on-going rehabilitation, transformation and modification works that the tenants and occupants of significant buildings are undertaking periodically. Those principles/strategies are basically addressing the current practices by explaining the non-admitted interventions, highlighting how harmful they could be, and by proposing alternatives to achieve the same results but with more sensibility towards the historic fabric.

In order to have an effective presentation of the suggested interventions, a model of a traditional house was drawn on the “Sketch up” Software. John Yarwood’s survey drawings of the Sufi House in Muharraq were used as base for the model drawn here. Most of the suggested interventions are incorporated in the model, for which general views are provided below.

Detailed drawings and specifications of implementation are provided in each of the following 19 Policies/Strategies.

The proposed detailed sketches are all combined in a 3 minutes movie that is appended to this report. This movie confirms that all suggested interventions can be combined in one of the significant buildings of Manama or Muharraq for the effectiveness of its technical and visual performance in its surrounding urban context.



The following section of the report represents a set of policies/Strategies that are targeting specific preservation themes or issues, which are inferred from the currently practices in dealing with the historic fabric of those traditional buildings.

1- John Yarwood, al-Muharraq: Special Volume, No. 36, Fig. 4.22, p. 62.

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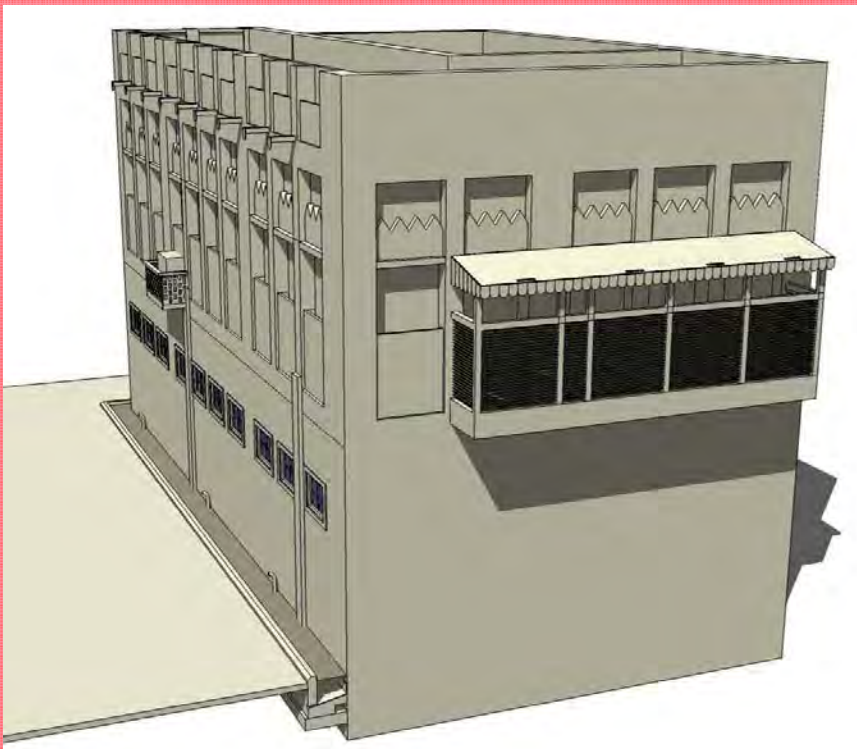
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“Sketchup”

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Model of a traditional house incorporating suggested interventions for preservation. The model is based on John Yarwood's survey drawings of Sufi house in Muharraq, drawn and modified according to the interventions suggested by this study of this report.

Restoration Code 2: Three levels of principles/strategies

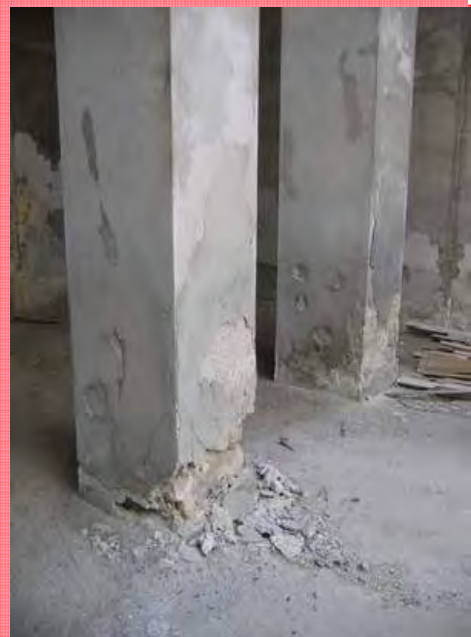
2.2.1. Excessive and improper use of cement over and With historic building materials

Background:

It is noticeable that in most recent conservation works, an excessive use of cement is used to either plaster the walls externally and internally, to prepare mortar for masonry, to screed over roofs. An extreme case is in Bayt al-Shaykh Salman in Muharraq, and in the recently restored house of Bayt al-Shaykh Mohammad Bin Salman in Manama. In the later case, however, a lime wash was applied over the cement plaster in order to give a traditional final look, but nothing to do with compatibility of building materials, and, thus, lime layer flakes away. Some of the houses' owners, such as the owner of the house of Jasim al-Qusayr in Manama, admit that the use of the cement in repair works is not providing satisfactory results, but the usual complaints are about the prices and the scarcity of traditional building materials, and traditional craftsmen.

Mortar of Portland or white cements are harder and more impermeable than the traditional lime based mortar which are soft and usually porous, with the exception of mortars with some fine additives such as ash, brick dust and others. Cement mortar usually contains sulfates which are harmful salts if dissolved in water and reach the lime based traditional mortars or the lime based coral or limestone blocks. It crystallizes into the pores of the materials causing material disintegration, and crumbling.

There is always a differential movement between the cement mortars and their traditional substrate, a fact that results in exhibiting a network of surface cracks, and checking. These cracks are areas where water infiltrates to the traditional material, dissolving the sulfates of the cement and crystallizing into the pores of the lime based materials, and the process of disintegration starts. Also, this is the reason for the water stain that are manifested in areas near by any water source, and water infiltrates, and is trapped behind the impermeable cement layer.



Cement plaster over vertical architectural surfaces in the house of Shaieh Salman House in Muharraq

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Implementation

- Removal of cement layers including the finishing and the substrate preparatory layer.
- Cry cleaning of all the exposed surfaces, and make sure to remove all accumulated dust, debris, and loose plaster chunks.
- Grouting and deep filling the masonry of the revealed walls, or roof slabs with a lime based grout with some additives to minimize possible shrinking when the mortar settles in the grouted voids.
- Plastering the exterior, the interior walls, or roofs according to the traditional specifications listed in points 4.3. and 4.4. of this report.
- In areas exhibiting wide cracks, lime based mortar reinforced with fiber glass shall be deep filled.
- The color of the exterior finish shall be based on the mix of the mortar with not addition of colors, except if specified in the zoning and planning regulations. No paints are permitted on top of the finished plaster.

Reference: Refer to zoning and planning regulations to identify the color of the plaster of the exteriors.



Network of hair-cracks (checking), developed on cement mortar newly plastered over limestone wall. Second floor Majlis, Bayt Mohammad Bin Salman, in Manama. Note that the whitish color of the plaster is of a very thin lime wash applied on top of the cement layer.

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Network of hair-cracks

(checking), developed on cement mortar newly plastered over limestone wall. Second floor Majlis, Bayt Mohammad Bin Salman, in Manama. Note that the whitish color of the plaster is of a very thin lime wash applied on top of the cement layer.

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Restoration Code 2: Three levels of principles/strategies

2.2.2. Use of reinforced concrete (columns, beams, staircases) to replace traditional structural elements

Background:

One common building practice that is harming the historic fabric of significant buildings, are the tenants' and the users' misuse of the structural elements, such as columns, beams, and staircases, of their traditional buildings. This is usually followed when the existing structural elements exhibits failure, and needed replacement to prevent collapses, or to introduce "stronger" element to fulfill a certain structural function the existing one could not offer. An example of the second scenario is the removal of the ground floor portion of the stone piers in order to widen the intercolumniation at the façade level to use the space behind as street shops.

A second example is to replace the structural wooden beams of traditional staircases with reinforced concrete ones to avoid the failure of the wooden elements caused by termites, or dampness, or to provide more strength to the staircase to heighten it for more flights.

A third example is the case where the users want to do some extensions, either vertical or horizontal, to their buildings, and use the available building materials that is reinforced concrete to construct floor slabs, roofs, columns, beams, and foundations. The newly introduced elements are too rigid to be compatible with the traditional fabric which is characterized by a certain amount

flexibility due to the amount of the wooden elements introduced in the original construction (beams, window and door lintels, tie beams inserted into walls, roof and floor joists, and others).

Newly introduced reinforced concrete slabs, parapets, and staircase in Bayt Siyadi, in Muharraq. Those are candidates for removal and replacements with more compatible construction materials and system. For procedures and conditions, refer to the implementation section below.



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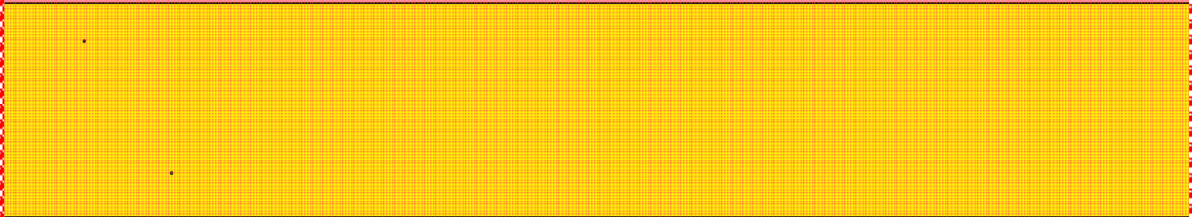
Incompatibility of rigid reinforced concrete and traditional construction elements, Siyadi House, Muharraq. This staircase, and parapet are candidates for reinforced concrete elements to be kept in place, as their removal would harm the surrounding historic architectural elements. However, a continuous material joint needs to be installed to allow each of the two different systems to behave separately.

Implementation

- Consider removing all reinforced concrete elements which are in direct contact with traditional building materials in case where such removal will produce minimum damage to historic fabric.
- Consider keeping the reinforced concrete elements if the damage produced in their removal are large and detrimental to significant traditional architectural or decorative elements. In such incidences, it would be necessary to provide a continuous joint that separate the two different system in order to allow each of them to behave differently according to their different properties.
- If decision is taken to keep the reinforced concrete elements, they should be treated in such a way that they should not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings. This condition follows the policy of 1964 Venice Charter on conservation and restoration.
- If the decision is taken to remove the reinforced concrete elements, replacements of missing parts shall integrate harmoniously with the whole, but distinguishable at the same time. Traditional or compatible building technique shall be followed in the replacing the removed reinforced concrete elements. No, or minimum, harm shall be allowed to the historic fabric.
- Any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp.

Reference:

Venice Charter of 1964, and Lahore Statement of 1980.



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Restoration Code 2: Three levels of principles/strategies

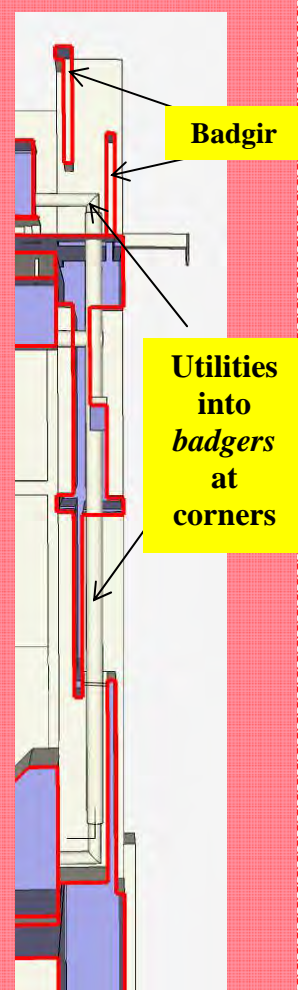
2.2.3. Generic specifications for connecting significant building to modern utilities

Background:

Most of the traditional buildings of Manama and Muharraq were built before the laying down of the public networks of utilities; the water supply, sewer lines, electricity, telephone cables, and others. Current occupants and tenants want to introduce all modern utilities into their homes and working spaces. Unfortunately, they are treating their traditional buildings similar to their treatments of any newly built reinforced concrete buildings. The following implementation procedures offers some ideas on how to install these utilities into traditional buildings without damaging its significant elements, or disturbing its structural system.

Implementation

- New installations shall be exposed outside the walls and ceilings, and shall be externally mounted. This, from one side, would produce the least damaging impact on historic architectural fabric, and from the other would assure better future maintenance of all extended utilities. In the case of water lines, exposed pipes would facilitate to locate leaking points for proper and quick repair.
- Possible locations for utilities' lines in the gap of the exterior *bagadirs* of the exterior walls, or on the ceiling wooden planks between exposed floor wooden beams (in the case of non-decorated ceilings).
- Exposed utilities' lines shall be fixed onto walls or non-decorated ceilings with either brass or stainless steel clasps with screws and dowels. No nails are allowed. Adequate number of clasps shall be used in order to prevent the sagging, and thus the damaging, of the utilities lines.
- Clasps and exposed lines could be painted with a color that would make them homogeneous with the surroundings so that they won't disturb the general atmosphere of the interior and exterior spaces.
- In the instances where the number of the exposed utility lines are large, and they have negative aesthetic impact, temporary covering sleeves shall be considered.
- Wherever utilities' lines shall pass a structural element, a pier or a roof or floor layers, appropriate sleeves, and in the case of a large opening an appropriate lintels.



Reference

Refer to the planning policies/strategies for implementation procedures required to assure the appropriateness of installations to the urban spaces where those connections exist.

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Restoration Code 2: Three levels of principles/strategies

2.2.4. Fixing air-condition units (window or split type)

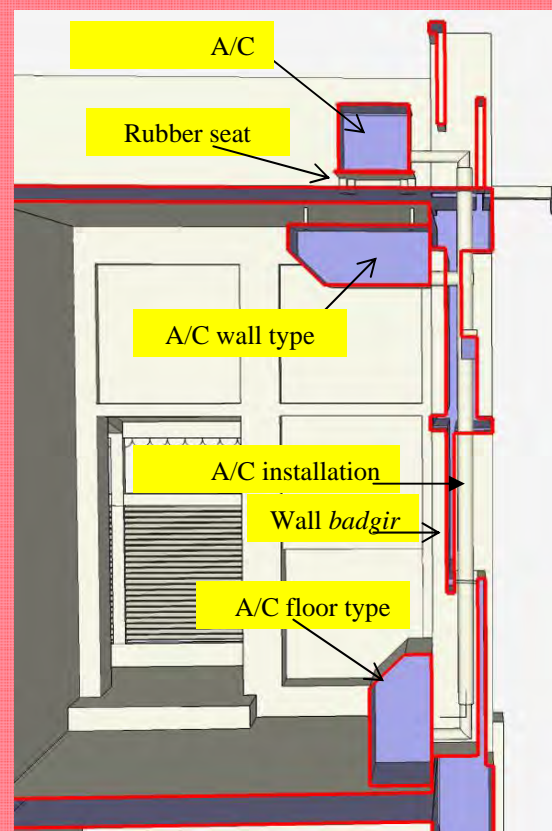
Background:

Most of the rooms that are currently used in a traditional house acquired an airconditioned unit, usually window type. In most of the cases, the window type is installed in the *farsh* area, between the two columns. The common practice is to fix the unit right above the *badgir* opening, so that it could rest on the lower *farsh* partition, and fixed in place by the upper partition. This fixing detail usually fail as those thin, 5-7 cm partitions, are designed to hold neither concentrated load, nor the stresses produced by the vibrating machine. This is the reason that most of the air-condition unit are found displaced, leaning towards the exterior, and usually damaging the *farsh* partitions.

The leaning creates another problem of discharging condensation water, which usually leak onto the wall. To remedy this problem, tenants of the ground floor rooms sometimes provides a sort of an external pole that helps to carry the unit and transfer its weight directly to the ground (See photograph below). In the case where tenants are aware of the damage that a window type can produce, they use A/C split units. Nevertheless, the details of the installations of the compressors, the interior fixation of the split unit, and discharging of A/C condensation water are usually damaging the architectural fabric.

Implementation:

If, for any reasons, window type should be used, the A/C unit should rest leveled on a platform that is extended from the structure of the floor, or fixed on side pillars. *Badgir's* walls are not strong to hold such units. Openings into a *badgir* wall shall be made carefully with the minimum damage, and a wooden lintel over the opening should be introduced. The window-type unit shall slide into the made opening without touching surrounding walls. Gaps between A/C unit and the surrounding walls shall be filled with elastic caulking, which needs yearly replacement.



Alternatives for installation of A/C split units

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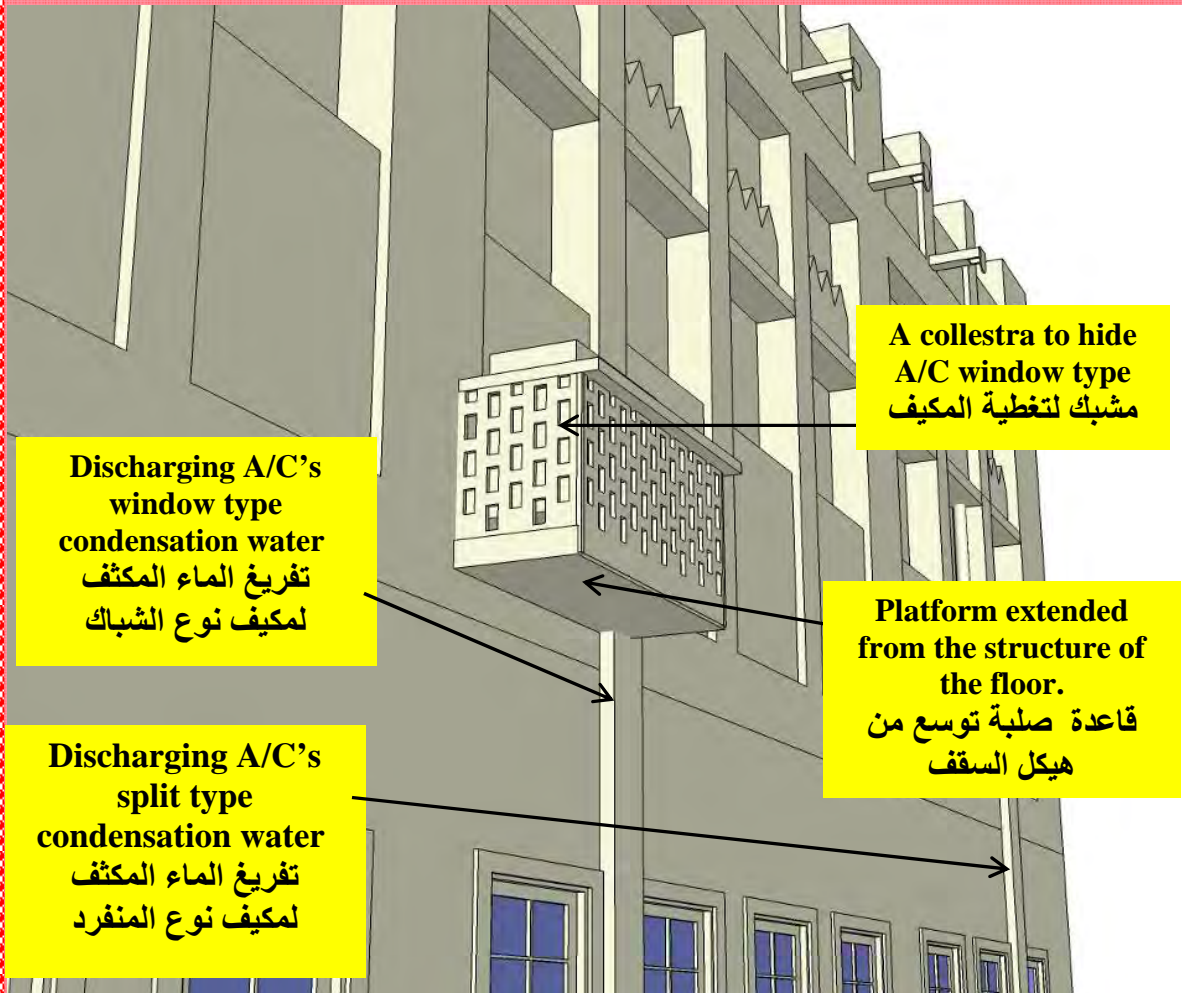
- It is preferable to use split air conditioning units than window types in order to guarantee minimum disfiguring of exterior façades of significant buildings.
- A/C split units should preferably be either floor or ceiling type. Wall type should be prevented in order to minimize wall damages. The compressor shall always be installed on the roof over a chassis that sits on a rubber seat to minimize vibration.
- Ceiling type can be hanged from exposed wooden beams with rubber joints. Floor type shall rest of a chassis that sits on rubber seats on the floor. The rubber seats and joints are introduced to minimize the effect of the machines' vibration.
- Condensation water shall be collected in discharging pipes that should be installed with adequate number of brass clasps on the piers of a *badgir's* space as shown in the sketch above. In the case of solid walls, a wooden box, with an appropriate finish color shall be made to hide down-pipes, as shown in the suggested façade above.



Reference:

Planning Policies/Strategies for the intervention's suitability with urban space. See No. 2.2.10 for the discharging A/C condensation water to the main sewer line.

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Restoration Code 2: Three levels of principles/strategies

2.2.5. Disregarding and disrupting the system in modifications existing structural

Background:

A current practice that is a result of the incompatible use of the interior spaces in a traditional house, is the blocking of the *badgirs* and the opening up of windows towards the street. This practice contradicts with the essence of the courtyard house, where all openings are towards the interior, and where exterior solid walls were used, throughout a series of wind catchers (*badgir*), to regulate the interior climate. In opening up an exterior window, the users usually ignore the structural system of the house, and knock down one or two of the stone piers in order to have enough space for the window (see the photograph below). This practice not only disfigures the essence of the traditional buildings, but also results in disturbing the structural system which is the main essence of such buildings, called 'latent frame.' A sudden collapse could result from the removal of intermediate piers without taking the appropriate structural precautions.

Implementation:

- No alteration of the structural system of any internal or external high significant buildings (see survey, and Policies/Strategies 2.1.1.-2.1.4). In the case where the changes were already made in this category of buildings, a full restoration of the original structural system shall be undertaken.
- Significant buildings where interior modifications are allowed (see Policies/Strategies 2.1.5-2.1.6), limited changes in the structural system is allowed on the condition of finding an appropriate structural alternative. A proposal for such alternative is as following:



See John Yarwood, al-Muharraqd: Architecture of a Traditional Arabian Town in Bahrain, in *Arts & The Islamic World*, Special Volume, No. 36, p. 35. When the structure is expressed externally, Yarwood called it the "emerged latent frame."

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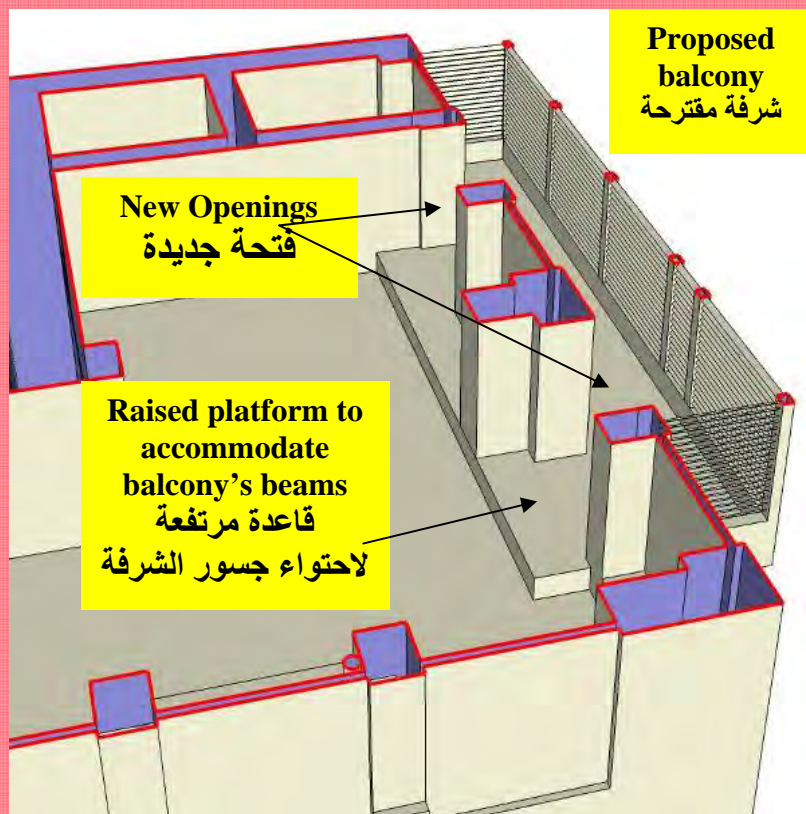


لاحظ مقالة جون ياور : المحرق: عمارة المدينة العربية في البحرين : رقم 36 صفحة 35. ” عندما يظهر الهيكل الإنشائي صريحا. يسميه ياور ” وضوح الإطار المستتر“.

- Consolidate and repair the existing piers,
- No dismantling of any structural piers is allowed.
- Dismantling the portion the *farsh* walls are allowed after securing the portions which will be preserved in place by placing adequate lintels over new door openings. No windows shall be opened as this will disrupt the essence of the courtyard type of building. Dismantling shall be proceed slowly with sharp chisels and small hammers. An insertion an adequate size doors to lead to a newly projected balcony shall proceed.
- It is necessary to contain all new door openings behind a newly introduced wooden balcony that resembles the traditional one (shown below). The floor of such balcony shall project from the joists of the wooden floors, and shall be fixed into it. This fixation will probably results in having the balcony's floor raised above the floor level of the room as shown in the sketches below.
- It is necessary to provide an adequate slope for the roof of the new balcony and gutters to discharge any accumulated rainwater (see principle/strategy No. 2.2.22.).
- This approach will also help to restore the vanishing urban aspect of the projected balconies, and will provide an architectural homogeneity that is based on some required necessity for interior space modifications.

Reference:

Zoning, and planning principles/strategies for the specific architectural details of projected balconies, and whether projections over façades are permitted.



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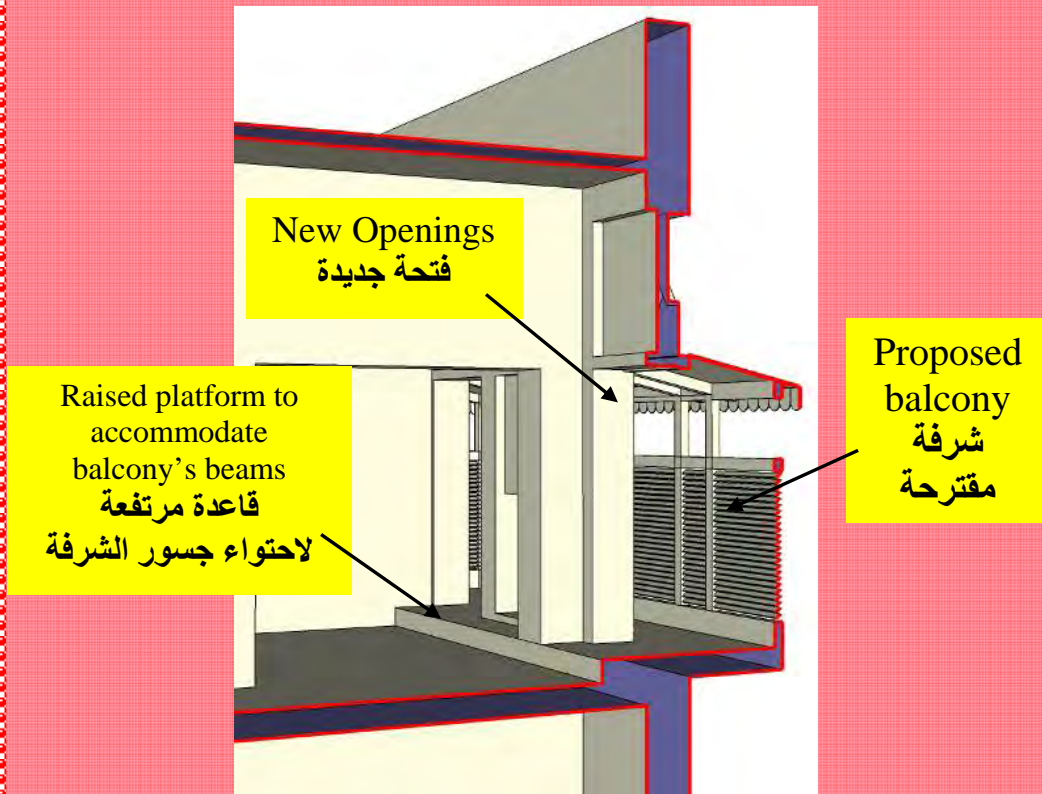
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Restoration Code 2: Three levels of principles/strategies

2.2.6. Ignoring historic layers in the process of rehabilitation and repairs

Background:

Historic buildings in Manama and Muharraq can be dated according to their construction system and their architectural style. Yarwood initiated an interesting attempt for such dating in his *al-Muharraqd: Architecture of a Traditional Arabian Town in Bahrain*, where he could identify four categories within the time span of 1850 until the 1940's. Such stylistic, architectural, and constructional differences shall be respected in any future intervention to prevent the confusion in dating the buildings. If the intervention is based on the introduction of modern architectural and construction systems, evidences of distinctive historic features shall be preserved in different scales depending on the case. Moreover, terms stated in international conservation charters shall be respected.

Implementation

- If conservation is adopted for a certain significant building, it implies preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept, and recognized. This is apply towards buildings subjects for 2.1.1.-2.1.2 and 2.1.8. No new construction, demolition or modification which would alter the relations of mass and color must be allowed.
- If conservation is adopted (buildings subjects for Policy/Strategy 2.1.1.-2.1.2. and 2.1.8.), the moving of all or part of the architecture cannot be allowed except where the safeguarding of the building demands it or where it is justified by national or international interests of paramount importance.
- If conservation is adopted (buildings subject to 2.1.1.-2.1.2. and 2.1.8.), items of sculpture, painting or decoration which form an integral part of the significant building may only be removed from it if this is the sole means of ensuring their preservation.



**Minaret of the Mosque of al-Fadil
before and after intervention**

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- If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), traditional construction and decorative techniques shall be followed. Where they proved inadequate, the consolidation achieved by a modern technique for conservation and construction, the efficacy of which has been shown by scientific data and proved experience.
- If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), the valid contributions of all periods to the significant building must be respected, since unity of style is not the aim of rehabilitation. When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological or aesthetic value, and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work.
- If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original.
- If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings.
- If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), reversible techniques should be used in any additions, modifications and changes, except where this is impracticable for reasons of dire structural necessity.

Reference

International Conservation Charters: Venice, 1964; and Lahore Statement, 1980.

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Restoration Code 2: Three levels of principles/strategies

2.2.7. Wood preservative and treatment

Background:

Most of, if not all, traditional buildings in Manama and Muharraq, and in Bahrain in general, are constructed with stone and wooden elements. The wood have twofold structural roles: the first is to tie the stone pillars to each other at various vertical levels, and the second is to provide beams that would span over openings and the span of the rooms. The wood is, therefore, a crucial component of the structure and if it fails, the building usually fall into ruins. The masons of those traditional buildings recognized the importance of this material, and devoted a lot of care to select the type of wood that would resist the climate conditions of Bahrain, and that would assure longevity. It is reported that most of the timber used in the construction works are mainly of teakwood that was imported from India and Africa (Kazerooni, 2002). The mangrove wood is durable, very strong and flexible, and was imported from Malabar Coast (Calicut) or east Africa (Zanzibar, Lamu) and this was used as the roof or the floor beams, which are locally called ***al-chandal or danchal*** (Wali, 1990 and Yarwood, 1999). Those were mainly used for floor and roof joists. The traditional masons also came up with a recipe of a natural wood preservative that is made from the remains of fish. This method is explained in the first implementation procedure, as it could still be revived today.

Unfortunately, termites (*sus*), wood worms (*qarada*), and white ants (*naml-abyad*) are a common problem in Bahrain that attacks the historical wood. It was reported to me that this problem started to rise in Bahrain recently, and there are claims that these insects were brought to the country with some newly imported types of wood. No matter how did they found their into the country, those insects need to be studied by biologists in order to design the most suitable treatment(s) that would prevent those insects to spread, and meanwhile would not affect the environment.

Wood that is newly imported to the country, especially those ready made furniture made in India currently very popular in Bahrain, shall be carefully inspected to make sure that they are not infested. Those two measures will help to eradicate the extent of the problem in the future.



***Denchel* wood eaten away in Shaeih Salman house caused the collapse of the floor**

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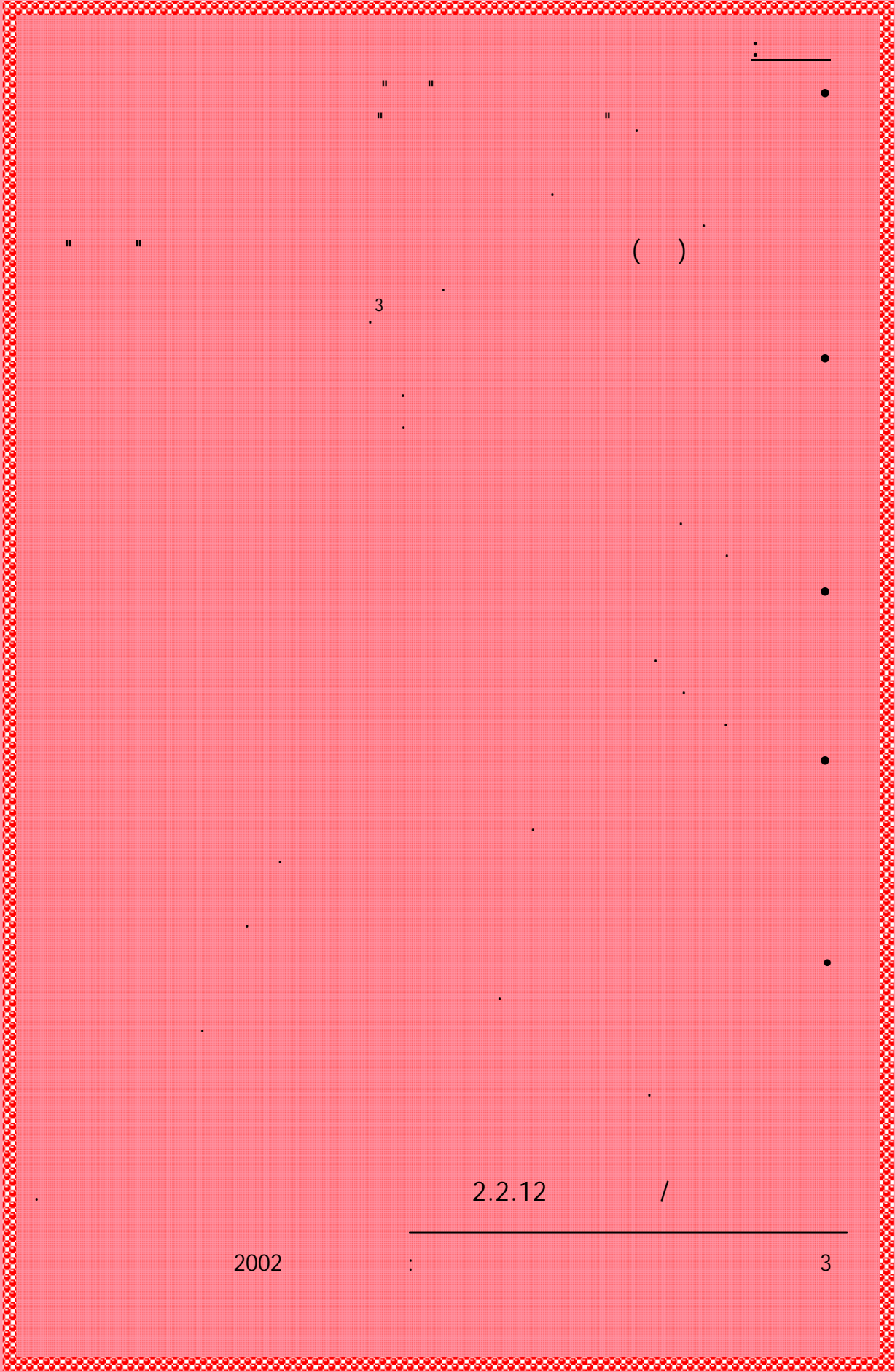
***Qarada* attacking the wall internal wooden ties, and its excrement is deposited on the walls of Sheikh 'Issa bin 'Ali house.**

Implementation:

- Applying traditional wood preservative that is called “*sol*,” which is made by dumping fish in a pit and allowing it to rot. “The pit was covered with a big stone. This as mixed with the surface oil and made into a paste. This sticky reddish substance was applied on the *danchal* poles in order to protect them from woodworm and other insect attacks. The date palm droppings were applied on the *mangroor* mat. This provided dark brown and red color to the ceiling, which were collected from the stacks of date palms known as ‘debs’, were applied on the diamond shaped bamboo called “*basjeel*.” This gave a black color to the bamboo mat. These two different shades with light beige palm mat gave interesting contrast to the ceiling.”
- Structural wooden members, which are found defected, shall be inspected structurally in order to check whether they can continue fulfilling their structural roles. If this is the case, defected portions of the wood shall be disinfected properly. It is preferable for such wooden members to be dismantled from their position, and to be treated in an enclosed environment in order to assure the effectiveness of the treatment, and the to minimize the negative effect on surrounding environment, since in most of the cases, disinfectants are not environmentally friendly. Appropriate respirators are required for the personnel involved in the treatment process.
- If wooden members are proved to be incapable to fulfill its structural role and they are proved not to hold any painted or carved surfaces, they shall be exchanged with new wooden members which shall be similar in wooden type and dimensions. In this case, the newly introduced wooden member shall be treated with the wood preservative explained above. Removed wooden item shall be extinct by burning it out in order to prevent infecting other wooden members.
- If wooden members are proved to be incapable to fulfill its structural role and they proved to hold significant decorative surfaces, whether painted or carved, they should be disinfected, and preserved, but not to be re-incorporated in any structural system. Preferably, treated wooden member shall be exhibited nearby its original location, after it was replaced with a new similar wooden members. If the decoration is of a special significance, transfer of this wooden member to a museum shall be considered, accompanied with proper documentation of its original context from where it was dismantled.
- Non structural decorative wooden members, i.e. window or door frames or ceiling friezes, shall be preserved in place. Defected sections could be either properly disinfected, or to be sawn out and replaced depending on the condition and the prospective use of the wooden element. In the case if the defected pieces shall be sawn away, the newly introduced wooden piece shall be dovetailed and doweled with the old member.

Reference

See also Policy/Strategy 2.2.12. of this report for periodical maintenance of wooden elements.



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Restoration Code 2: Three levels of principles/strategies

2.2.8. Roof screed and roof slope

Background:

The current practice for maintaining roofs over buildings is to over-layering it with screeds. In traditional building, this practice results in overloading the roof beams until they reach to their maximum loading limit, after which they break, transferring the load they were carrying to the adjacent beams, which in their turn break and so on until the roof fails. On other consequence from overloading the roof beams with additional screed layers, is that usually the roof bows in the middle span, where the load stresses are maximum. This causes the roof slopes to be disrupted, and for falling water to pond in over the middle area of the roof. Throughout hair-cracks in the screed, water infiltrates and reached the wooden *denchel* contributing to the damage of the wood, and to further the reasons for its failure. Similar results also manifests, if the cross sections of the roof beams were inadequate to offer enough strength to carry roof layers without bowing in their middle span. In addition, users of significant buildings find the roofs the only empty space in the house to install some modern equipment such as reception dishes, and water tanks. Those equipment are heavy and they are exerting concentrated loads on either the walls or on some of the roof beams.

Literature points out that the traditional sloped roof dock are made out of mudpack, which is usually 10 cm thick, and that the top surface was finished with lime plaster to provide a hard surface. The top surface which is vulnerable to weathering needs to be repaired and maintained regularly.

There are also reference to a traditional waterproof plaster that is called *saruj*, or *sarooj*, which was used in bathrooms or over roofs. The plaster is made out of the donkey manure which was mixed with pinkish color clay and was then burnt in the kiln. The result was powdered, and was used in two stages: the first mixed with the clay and plastered, and the second powdered and mixed with water and applied on the wall.



4. Farry Kazerooni, *Gulf Islamic Architecture, Bahrain: Oriental Press, 2002.*

5. See Kazerooni, and Yarwood. Yarwood stated that, saruj, otherwise as “lingeh cement” is known for its moisture resistance in the soil. It is an expensive treatment, and probably time consuming that in 1906, a British who lived in Bahrain wrote that he could only do the dado height of his building.

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Roof of House of Jasim
al-Qusayr in Manama

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Implementation:

- It is necessary to check all the wooden beams that are supporting the roof, and make sure that they are not affected by termites, and their wooden cross section is adequate to withhold the weight of the roof. It is also important to check whether the two extremities of the roof beams are resting properly on top of the walls on top of an appropriate wooden seat. In the case of replacements, newly introduced wooden members (whether beams or wooden seats), shall be treated against termites (see 2.2.7.)
- It is necessary to provide adequate slope of 3-4% for the screed of the roof. The lowest point of such slope shall be at the gargoyle (*mirzam*).
- It is better if the desired roof slope is achieved through sloping the actual beams of the roof, and to prevent adding layers of screed, thus more load, to make up the slope.
- It is necessary to introduce a waterproof membrane above the sloped roof planks in order to prevent rainwater to reach to the wooden members of the roof. The waterproof membrane shall be bitumen based, and reinforced with fiber glass. It is important to assure the smoothness of the wooden planks before applying the waterproof membrane in order to prevent puncturing it. It is desirable if this membrane could be cold applied, in order to prevent the fire hazards of a the torch application of such sheets.
- The sheets of waterproof membrane shall overlap at least 10 cm of distance. The installation shall start from the gargoyles level, into which the sheets shall be extended. Overlaps shall then proceed upwards, providing enough skirting over the roof parapets, at least 15 cm above finish roof level.
- Use of a 10 to 15 cm screed, preferable hydraulic lime mortar with an addition of ash, and light weight aggregates. It is important to make sure that the screed will be compacted and no air bubbles are trapped into it, as those bubbles are one of the causes for developing hair-cracks, and consequently water infiltrating the screed layer.
- Traditional roof screed (*sarooj* or *saruj*) shall be tested and evaluated before use as a roofing screed.

Reference

Policy/Strategy No. 2.2.7, 2.2.9 in this report

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Roof failure in house of Shaykh Salman, Muharraq

Restoration Code 2: Three levels of principles/strategies

2.2.9. Design of *Mizram* traditional water gutters

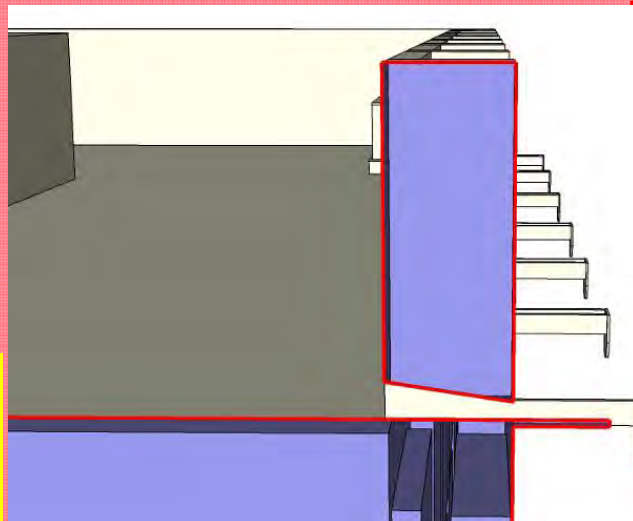
Background:

It seems that the roof gutters, or gargoyle, or what is called locally *mizram*, is a distinguished element of an exterior façade in a traditional building. It has a particular design, as it is made out of wooden planks, sloped towards the exterior, and had hanging fascia that serves to drop the collected water at a certain position rather than to make spilling uncontrollably over the street below. The *mizrams* are usually positioned at the roof level below the roof *badgirs*, in the case if they exist. They are installed right above the roof wooden planks. If the roof is not used, i.e. the roof of the *majlis* in Manama, photographed below, the *mizrams* come right below the parapet line since no *badgirs* are provided in such roofs. The *mizrams* seem that they don't have a particular position in relation to the horizontal line of the façade, so that they can appear right under the stone pillars of the roof *badgirs*, or right below the *farsh* of the *badgirs*. In no incident *mizrams* were found pierced into a *farsh* wall.

It is not clear why those *mizrams* are so frequent along the façade, even though rainwater is scarce in Bahrain. Beside providing an aesthetic rhythm, it seems that their frequency along the façade contributes to minimize the roof slopes as each structural bay has its own gutter to discharge falling water. Only 2 to 4 cms difference of height in the roof screed should be enough to provide an adequate slope that guarantee immediate water discharging.

In current restoration and rehabilitation practices, the wooden *mirzams* are replaced with modern pipes which has little to do with an element that became distinguished of a traditional façade. Also, the roof *badgirs* in most of the current rehabilitation projects are roofed to provide more interior rooms and spaces. The *mirzams* in their original positions do not have any function, and therefore, they are relocated above the new roof level right below a shallow parapet. The new position, however, does not provide the *mirzams* its tradition setting, and modify its original function and meaning.

The traditional setting and
performance of *Mizrams*
الوضع التقليدي وأداء المزريب



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Mirzams
Shaykh 'Issa,
House
Muharraq





Abdallah al-Zayid House, Muharraq

Restored by Lebanese, Muharraq

The dotted lines show the original level of the *mirzams* which were heightened in recent restoration.

Implementation:

- *Mirzams* shall be positioned right above the wooden planks, and its projected wooden platform shall be a continuation of the planks leveling.
- *Mirzams* platform and their sides wooden planks shall be waterproofed with either a brass flashing or an extension of the roof's waterproof membrane.
- *Mirzams* shall be made out of good quality wood (see list of the wood in point No. 4.4.) in order for it to sustain weathering conditions. Wooden pieces shall be soak into hot natural oil, such as linseed oil, in order to elevate the wood's moisture content, and thus elongate its lifespan. Naphtha or turpentine could be added to the oil and to assure better permeate into the wooden pores.
- Assemblage of the *mirzam's* wooden pieces shall be made with either brass screws, or wooden dowels in order to prevent the rusting of steel nails.
- The installation of the *mirzam* unit shall be simple and easy to be dismantled in order to provide periodical exchange of the unit without damaging the surrounding fabric.
- In high significant buildings subject for conservation or rehabilitation (policies/strategies 2.1.1.-2.1.4) the original positions and the setting of the *mirzams* shall not be changed even if a higher new roof was added. It would be necessary to find a way for those *mirzams* to collect discharge water from higher positions without relocating them, i.e. through wall channels.
- Staining color of the wooden surfaces of the *mirzams* shall be homogeneous with other wooden elements of the façade of the building and in the surrounding urban space.

Reference:

Refer to policy/strategy 2.2.10 for draining water discharged from *mirzams*. Also refer to urban codes for the maximum and minimum projections of *mirzams*, and the finishing color of its exposed wood.



مباني تراثية Traditional Buildings

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Restoration Code 2: Three levels of principles/strategies

2.2.10. Rising dampness over façade walls, and preventing Asphalting the roads against historic façades

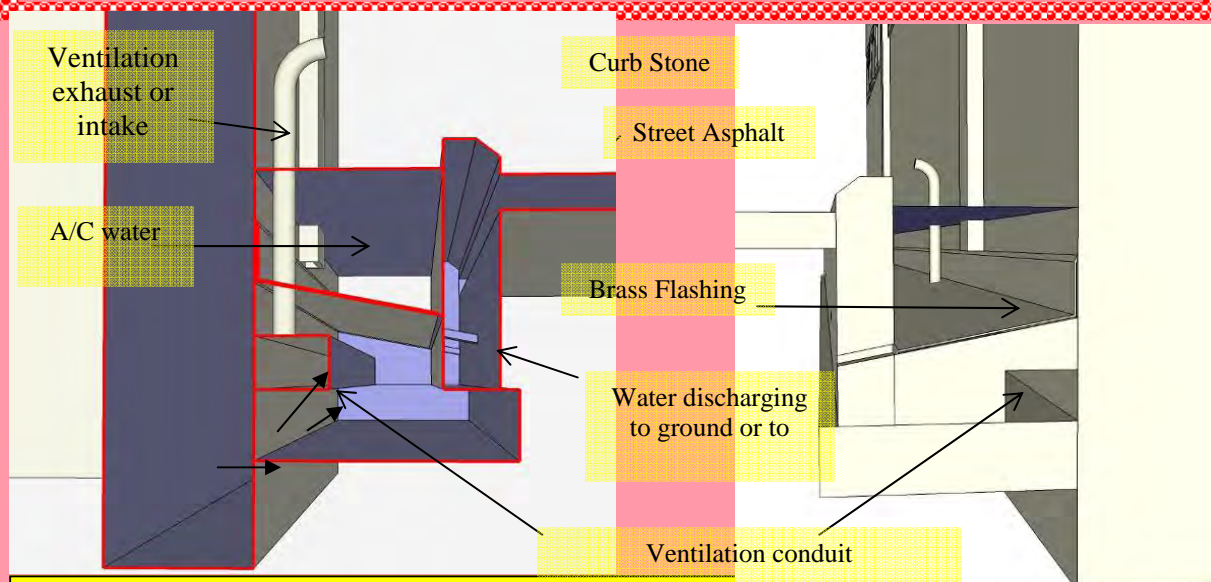
Background:

Most of the streets in the historic areas in Manama and Muharraq were asphalted to allow car traffic. The asphalt layer reaches the exterior of the building walls, and in most of the cases, is not sloped in a way to keep water away from them. Surface water is directed towards buildings, and infiltrates its walls through hair-cracks in exterior cement plaster of the façades, and thus trapped into it contributing to the damage of the building materials. Moreover, ground water is trapped under the asphalt layer and finds no way to rise except through capillarity through porous building materials of the exterior walls.

This phenomenon causes a continuous line of water staining along the exterior façades, and the formation of efflorescence due to the dry and wet cycles of their lower sections.

Implementation:

- Stop asphalting at least 50 cm away from exterior walls,
- Design and implement a ventilation system at the perimeter of the exterior façades of significant buildings on the basis of the schematic concept shown in the above sketch.



Sections at the street level showing suggested details of ventilation and water drainage system

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Restoration Code 2: Three levels of principles/strategies

2.2.11. Mixing traditional mortars for different uses (wall construction, plastering, roof screed)

Background:

It is noticeable that mortar of Portland cement has replaced all sort of traditional mortars. As shown above (see 2.2.1 and 2.2.2.) cement proved to be detrimental for traditional building materials. It is therefore important to emphasize on appropriate mortars when we deal with stones and wood structures. The purpose of this strategy/policy is to list some of the traditional mortars as described in the literature. More descriptions of such materials are available in section No. 4 of this report.

Implementation:

- For the mortar used in the construction of the random-rubble technique, the mud usually excavated at Rifa'a area was used.
- For Plastering (rendering) three different mortars are used depending on the layers:
 - ◊ The first, called *al-tetrees (al-tatris)* is made out of mud similar to the one used in the construction of the rubble masonry. The purpose of this layer is to fill-up the holes or major unevenness in the masonry of the wall,
 - ◊ The second *al-misaih* is made out of mud and gypsum. The purpose of this layer is to establish a reasonably smooth surface.
 - ◊ The third *al-tabidh* was lime and gypsum. The third coat is a smooth decorative coat of lime and gypsum. The top coat is sometimes set back about 3 cm from niches and windows.
- Plastering on *farsh*, only one very thin coat of gypsum, about two or three millimeters thick, was applied.
- Components of the mortars:
 - ◊ Rifa'a Clay (tin al-Rifa'a): from Rifa'a in the centre of the main island. This was produced by the weathering of the exposed rocks in the central depression. It was used to cement the rubble in the core of walls, and was also mixed with the lime mortar for certain purposes, perhaps to reduce the susceptibility of gypsum plaster to action by water, particularly on sulfates and other salts.
 - ◊ Mud from coral reefs: Mortar made from burnt mud from the coral reefs.
 - ◊ White mud collected at Bu Ghazal: Ship owners were commissioned by owners or builders to collect the mud and bring it to Muharraq harbor; this took two or three days. This was too expensive for poor people prior to the 1920s or 1930s, and they used mud from the local reefs.
 - ◊ *Nurah*: Lime.
 - ◊ Djuss (Gypsum): made by crushing and burning limestone. Initially the small cottage industry near A'ali was the only source, but more recently it was imported from Saudi Arabia and Qatar as it was less prone to crumble than the Bahraini product. The gypsum was mixed with lime (*nurah*) which improved its workability. When supplies were imported from Qatar or Najd (Saudi Arabia) to Muharraq, specialist burners calcined it by covering the stone with timber, which was set on fire.

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Restoration Code 2: Three levels of principles/strategies

2.2.12. Maintenance of architectural wooden element

Background:

As it was explained above, see policy/strategy 2.2.7., construction wooden elements are essential for the structural stability of the traditional buildings. It is therefore necessary to suggest procedures for a periodical maintenance for the exposed architectural wooden elements, i.e. floor and roof beams, wooden doors and windows to reduce chances for their attack with wood termites, and to balance their moisture contents in order to prevent their drying up and being brittle. It also suggests a periodical inspection plan to identify the wooden elements, even those which are inserted within the walls, that are attacked by termites, and measures to be taken to deal with affected wooden pieces.

Implementation:

- Applying the traditional wood preservative periodically at least bi-annually. For the preparation and application methods of this wood preservative, see 2.2.7.
- Conducting a periodical, at least annual, inspection of all wooden items, exposed and inserted in the construction of the walls, floor, and roofs, to identify areas attacked by termites or woodworms. For inspection methods, see Fielden, cited in references below.
- In the case where ground (subterranean) termites are identified, which is typical to humid coastal areas such the Bahraini climate, injection of the ground with disinfectants are required, and in some cases exchange of soil is also recommended. If the identified infestation indicates a heavy attack of ground termite, in addition to ground disinfection, it is suggested to insert a continuous layer of insulation sheet (brass or lead or waterproof membrane) that separates the exterior wall from its foundations, where most of the attack is taking place. For the wooden elements identified to be infested by termites or woodworms, localized disinfecting is required. For various methods of disinfection, see Fielden 149-151.
- Filling cracks and voids developed on the surface of the wood with an adequate filler, either with a paste of wood dust and gum resins or with a plaster of Paris. The filling shall take place after careful cleaning of the voids and cracks so that the accumulated dust won't create a separation surface between the filler and the wooden fibers.
- Applying wood polishing either oil based or French:
 - ◊ Woods which contain a considerable quantity of resin, soft wood, may be filled with boiled oil or spirit varnish. For woods which it is desired to finish as light as possible an oil filler should not be used, as oil has a tendency to darken the color. Polishing that consists of coating the wood with shellac dissolved in mentholated spirit, and occasionally other gum resins. The polish is rubbed in instead of being painted on with a brush.

Reference: See Bernard Fielden, *Conservation of Historic Buildings*, Suffolk: St Edmundsbury, first published in 1982, revised edition 1998, pp. 135-151.

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Restoration Code 2: Three levels of principles/strategies

2.2.13. Preservation and maintenance of wall plaster

Background:

The common current practice in dealing with wall plaster in any conservation or rehabilitation projects is to remove the existing exposed layer and replace it with a new one. In few incidents, replacement is made with a traditional plastering techniques, but in most of the cases cement plaster is used (see policy/strategy No. 2.2.1. in this report). This policy/strategy suggests a third approach in dealing with the historic plaster based on the notion of preserving as much as possible from the historic fabric, and if necessity and conditions mandates, replacements shall be minimum, homogeneous with the surrounding plaster but distinguishable.

Implementation:

- Preserving as much as possible from the historic plaster if possible.
- If layers of historic plaster in detached from their substrate. Grouting shall be consider to fix the detached areas, and to prevent further development of air gaps and voids behind the finish plaster.
- If cracks are found developed on the surface of the historic plaster, they should be inspected to identify if they are structural or simply manifesting through the finish layer. If cracks are structural, stitching of the wall with wooden ties are required at the cost of partial removal of the historic plaster. If cracks are manifesting only on the surface, they should be filled with lime mortar that is similar to the composition of the existing historic plaster (see 2.2.11. for the composition of the historic mortar).
- If surface cracks are wide (more than 1 cm), they should be filled with compatible lime mortar reinforced with fibers, either straws treated against termites, or preferably fiber glass.



**Exterior being renovated in
Muharraq**

In both cases, historic wall plaster was scrapped away,
and being replaced with new ones,

وفي كلتا الحالتين، تم كشط جص الحائط التاريخي واستبداله بجديد

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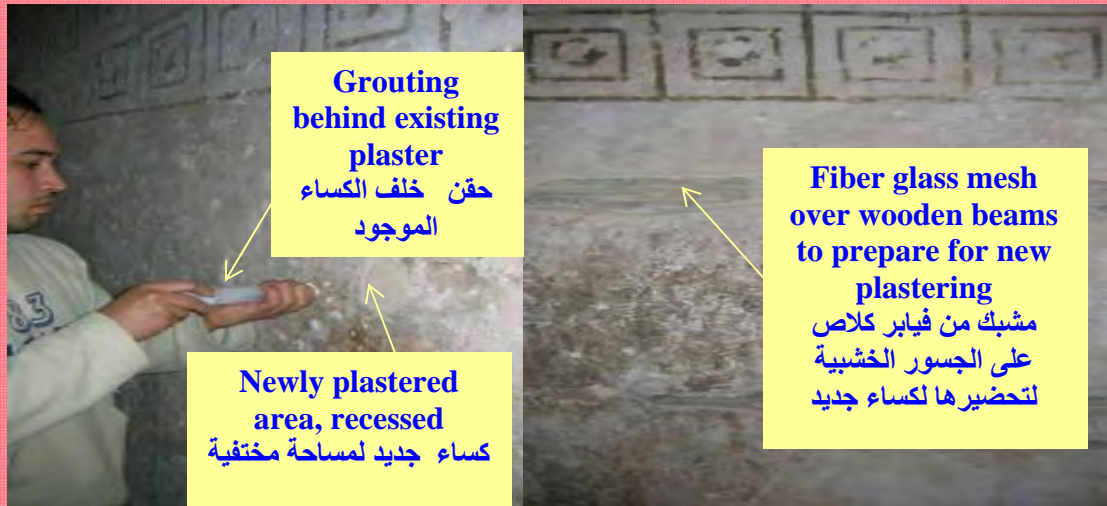
Courtyard facades of Siyadi house.

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- If there are areas in the walls that lost its plaster, capping along the profile of the existing historic plaster is necessary in order to prevent the spilling of the injected grout through areas of plaster loss. Capping mortar shall also me similar incomposition to the existing mortar, with a small addition of gypsum to allow better workability of the capping profile.



- If the walls' wooden tie beams were being exposed, and they lost their traditional straw ropes, which worked enhanced the attachment of the surrounding mortar to the wooden elements, an fixation of fiber glass mesh over exposed elements is required to reinforce any new addition of plastering layer.
- If layers of dust, pollutant deposits, smoke, and/or graffiti were found deposited on the surface of the historic plaster, changing its original color, and affecting the overall aesthetic quality of the façades, cleaning procedures shall be considered. Dry cleaning, using soft brushes and sharp small scalpels shall be tried at first. If found inefficient, chemical cleaning shall be selected using application of poultices that contains solvents to dissolve deposits on the surface of the wall. Poultice composition shall be designed according to the case. In the case of using a chemical cleaning, it is necessary to neutralize the cleaned surface, usually with distilled water, in order to prevent chemical residues to affect the composition of the historic plaster.
- Areas where historic plaster was found missing, or knocked don in order to fix the conditions of the wall behind, or where existing plaster layer could not be saved because of its condition, shall be re-plastered with mortars and procedures that are similar to the traditional ones (see 2.2.11.). Color matching through samples shall be confirmed before the application of the new plaster. Finishing procedures shall distinguish between the historic plaster layer and the newly added one. Also, new plaster addition shall recess, no more than 1 mm., from the level of the existing layer to assure a better readability of the overall plastered surfaces.

Reference: See also Policy/Strategy No. 2.2.11. in this report for plasters' traditional mortars and their components.



Grouting behind the historic plaster to preserve it, capping around losses, and fixing fiber glass mesh in areas of the losses to prepare them for re-plastering. Note re-plastered area are recessed to distinguish them.

حقن خلف الكساء القديم الموجود
ووضع كساء جديد للمساحة المخرقة بوضع مشبك من
فيابر كلاص على الجسور الخشبية الساقطة
لتحضيرها لكساء جديد، يلاحظ تمييز مساحات الكساء المعادة

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Restoration Code 2: Three levels of principles/strategies

2.2.14. Alternative uses for wall *badgirs* in air-conditioned rooms

Background:

In most of the rehabilitation projects that have been achieved in Manama and in Muharraq, the traditional climatic control system, which consisted a series of walls' wind catchers, has been blocked in order to allow the installation of air conditioning units. The essence of the *badgir* inside the rooms, and along the exterior of a traditional building is no longer preserved, and this feature became decorative more than functional. This policy/strategy differentiate between two approaches: the first is the level of conservation specified in 2.1.1, 2.1.2., and 2.1.8, where those *badgirs* should be preserved as a functional element, and the second is the level of rehabilitation assigned for 2.1.3-2.1.7, where those *badgirs* could be preserved and integrated in a new function.

Implementation:

- Where conservation is assigned for a high significant building, wall *badgirs*, and roof wind catchers, shall be preserved as functional climatic control elements. Those conserved elements would preserve the functional aspect of those important traditional systems, and would emphasize on the fact the what shaped the local traditional architecture are the attempts of Bahraini people to provide livable interior spaces in the harsh exterior weathering conditions. In such cases, all the *badgirs* accessories, such as the pivoting shutters, shall be re-incorporated.
- Where rehabilitation is assigned for a significant building, more flexibility in dealing with wall wind catchers are allowed. *Badgirs* shall be blocked by either blocking the traditional shutters permanently, or to provide a wooden decking that would seal the gap between the two *farshs* of the *badgir* system. It is important to cover the external *badgir's* platform with an external plaster that has an adequate slope towards the exterior face of the wall. The façades that are vulnerable torainwater, it is important to fix a flashing, preferably in brass, that extends over the *badgir's* platform, and provides a water drip so that discharged water would not spill over the façade and stain its external plaster.
- Internally, the *badgir* space could be used for several purposes:
 - ◊ To fix a window type air conditioning unit (see Policy/Strategy No. 2.2.4.)
 - ◊ To use the lower spaces between the stone piers as cupboards by installing shelves and double doors. All installation shall be on the piers and not on the *farsh*.
 - ◊ The recessed space of the *badgir* can be used as an indoor flower box. In this case, instead of sealing the *badgir* open space with solid wooden planks and flashing above, the roofing could be made with a sloped panel of reinforced glass, or even stained glass to provide a special interior ambiance. The drainage of the flower boxes could be made similar to the one proposed for the air conditioning units (see Policy/Strategy No. 2.2.4.). The flower boxes could be an ideal use of the roof *badgirs*, if a future roof garden is considered.
 - ◊ The *badgir* spaces could also accommodate indirect lighting units in the case if the space will be used for an exhibition that needs indirect lightings on a floors.

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Restoration Code 2: Three levels of principles/strategies

2.2.15. Accessories for traditional doors and windows

Background

The doors of Bahrain are a unique feature that identify the traditional houses. They are considered an honorable piece that tenants and users are so attached to, to the degree that when a family moves from a house to another, they usually dismantle those doors to take with them to the new destination. Those doors are known with their simple structure, and their decorative nose and bands that surrounds their perimeter. They are also known with their exposed nails with have a big size head and they are hand forged steel. Between horizontal rows of exposed nails, there are usually centralized decorative motives.

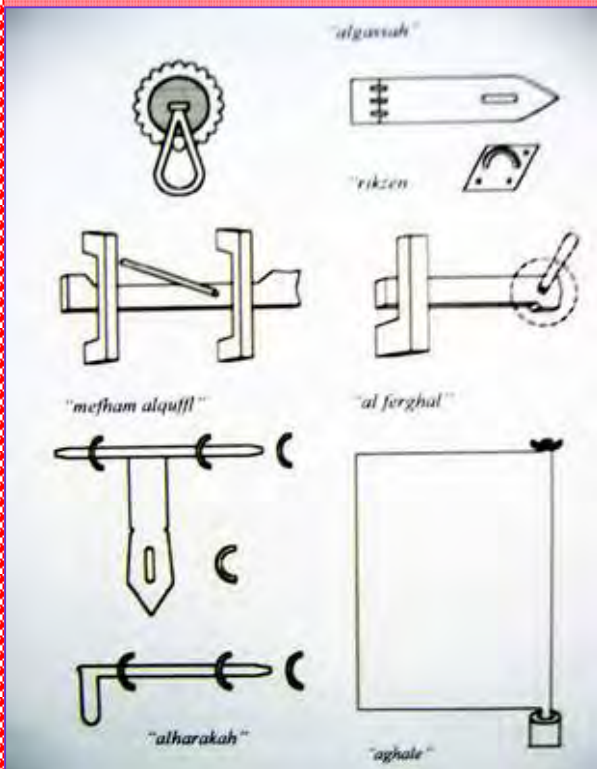


Left: old door after conservation, middle: new door made according to traditional design. The two in the house of Salman in Manama. Left: wooden peg to keep door open at House of Bin 'Issa in Muharraq.

Implementation:

- Select suitable preservation measures from those listed in Policy/Strategy 2.2.12, and applying them periodically (whether for disinfecting, or polishing procedures).
- Using all traditional accessories that go with the type of doors and windows in subject. It would be harmful, for an example, to change the *aghale* (spindle pivot) for modern hinges since the structure of those doors are not designed to be hanged from the sides. A list of the traditional accessories is available in point 4.6. Examples are: *Aghale* or *Raha*: Spindle pivot, door hinge projecting at top and bottom of the door leaves; *Al-Bezljaj*: timber lock and key system; *Fixing wooden pegs*: Series of wooden pegs to fix the door in its opened position (shown in the left photograph); *Mefham*: a sliding timber locking gadget; *Ferhal*: A timber piece rotates to open the door; *Al-seakh*: External side lock in brass hasp; *Al-harakha*: Brass barrel lock; *Bu-anf*: decorative door noze; *Bu safgha*: Double door; *Khokha*: door that has small insert door; *Door knobs*: different ones are usually fixed on external doors, each produced different sounds so that men and women can identify the sound and attend accordingly. Some times there were three or four occupants and will answer to each sound of door knocks; *Kamar*: Pierced decorative panels are placed at the external walls, usually placed above the opening to lightening the weight of the wall masonry on the door lintel.

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Door accessories as shown in Kazerooni

Restoration Code 2: Three levels of principles/strategies

2.2.16. Conservation of carved gypsum panels

Background:

The site visits to all rehabilitation projects that were achieved in Manama and Muharraq (listed in point 6. of this report) proved that the trend in dealing with the carved gypsum windows and panels, is that the original ones, which were probably found in damaged conditions, were removed and replaced with newly carved ones. Probably the newly introduced ones follow the designs, the shape and the installation details of the ones which were removed. This approach disrupts the historicity of the place, and results in damaging the precious historic fabric that could be preserved. This policy/strategy suggest to develop a new approach towards those carved gypsum elements based on conserving most of its historic fabric, and repair them with necessary measures in order to provide them with more strength to sustain weathering procedures.

Implementation:

- Studying the conditions of the existing historic gypsum window to decide if it could be dismantled, conserved in place, or making a new one based on original design. It is also necessary to assemble all broken or loose sections for a possible reintegration in a the conservation process. Existing design shall be documented on tracing paper, and attempting to position loose fragments into the composition.
- Pre-consolidating all the existing gypsum with an appropriate consolidate, i.e. 2-7% solution of paraloid diluted in acetone depending on the condition. Consolidation helps dismantling the windows to be cast and carved on an horizontal platform.
- Casting new gypsum in areas that total or partial losses. If areas of losses are large, consider inserting stainless steel pins, or fiber glass to tie the existing sections with the newly cast areas. The new gypsum paste shall be similar in composition and in color to the existing one. Casting shall be made into the wooden frame that will hold the element. For a better adhesion between the gypsum and its wooden frame, new stainless steel pins shall be nailed into the wooden elements and left projected to adhere with the solid areas of the newly cast gypsum.
- Re-carving the newly cast gypsum according to the design inferred from existing fragments. Re-installing the frame into its position after complete dryness. Installation shall be secured in place with a continuous flexible caulking to provide flexibility for the material differential movements.



Old gypsum window restored by preserving its pieces;

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Nagui carving a new gypsum window.

Restoration Code 2: Three levels of principles/strategies

2.2.17. Stitching *Rukniyya* on wooden lintels in arcades

Background:

In high significant buildings, the upper corners between free standing columns and the supporting wooden beams are usually decorated with *rukniyyat* (plural). *Rukniyya* (single) is a carved gypsum decoration that takes the shape of a structural corbel. In no visited case those *rukniyyat* were found structural. When such decoration cracks, and falls down, the common practice is to remove it, and replace it with a new one. This policy/strategy suggests possible conservation of existing historic fabric, and not to limit replacement of historic fabric.

Implementation:

- Studying the conditions of the existing damaged *rukniyya* to decide if it could be dismantled, conserved in place, or making a new one based on original design. It is also necessary to assemble all broken or loose sections for a possible reintegration in the conservation process. Existing design shall be documented on tracing paper, and attempting to position loose fragments into the composition.
- Pre-consolidating all the existing gypsum with an appropriate consolidant, i.e. 2-7% solution of paraloid diluted in acetone depending on the condition. consolidation helps possible dismantling of the *rukniyya* to conserved and restored on an horizontal platform.
- Making a wooden form that follows the original design , and casting new gypsum in areas that total or partial losses. If areas of losses are large, consider inserting stainless steel pins, or fiber glass to tie the existing sections with the newly cast areas. The new gypsum paste shall be similar in composition and in color to the existing one. Projected stainless steel pins should be encountered before casting in order to have integrated hanging points. Those pins shall be well structured into the gypsum unit, whether screwed into its wooden internal webs, or welded into its internal steel structure.
- Finishing the newly cast gypsum according to the design inferred from existing fragments. New carving shall produce a surface that is different from the historic finish in order to facilitate distinguishing between historic and modern materials.



Gypsum decorative corner (*Rukniyyat*)
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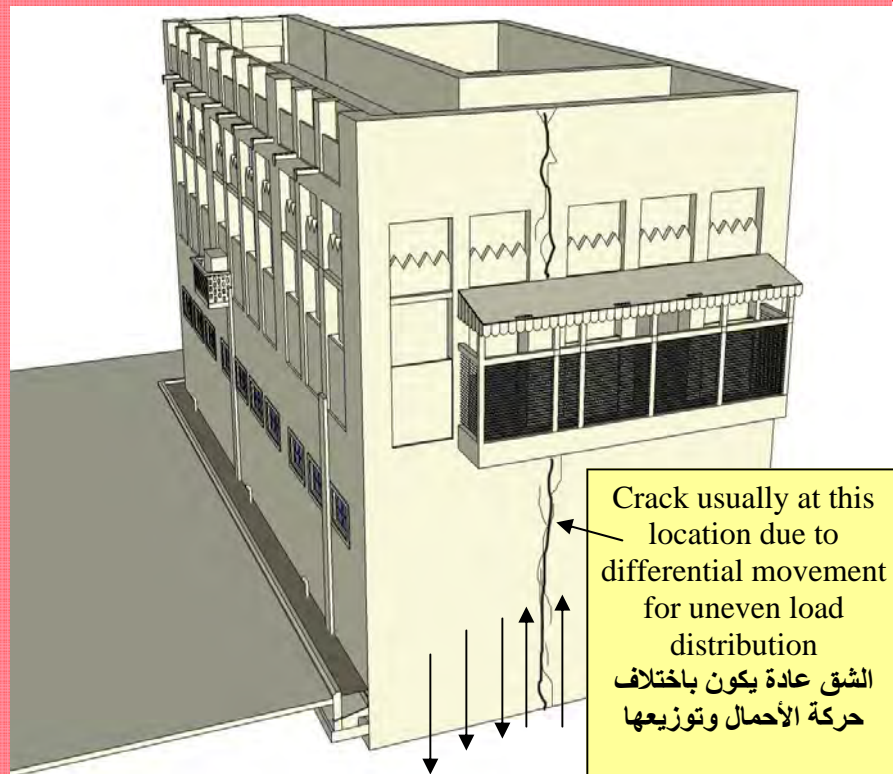
Restoration Code 2: Three levels of principles/strategies

2.2.18. Corner stitching in upper Majlis rooms

Background:

Even though the construction system of the traditional houses seems to be a column/beam frame system, on the foundation level this system works as a continuous wall bearing. Since the poles of the intermediate floors and of the roof are all positioned in such a way that they span the shortest dimension of the built mass, the two longer opposite walls among the four walls of the mass would be responsible to transfer the load to the foundation level. If, at the foundation level, the corner of the mass is not well tied, the system of load transfer would result in developing corner cracks due to differential settlement. This defect is apparent when the short side of the built mass is relatively long (more than 2.5 meters), thus, weak to sustain the differential settlement, and if any of the long walls carry the loads of the floors and the roofs of one mass. In this case the short side work as hinges and develop longitudinal cracks at the corners.

An obvious example of such cracks are the one developed along the corners in Shaykh Salman House.



The above sketch demonstrate the failure process due to differential settlements, since the load distribution along the side façade is uneven. The first two bays from the corner are not transferring any loads as all of the roof and intermediate floor beams are directed towards the main façade. The following three bays of the secondary façade are carrying the loads of the roof and the intermediate floors.

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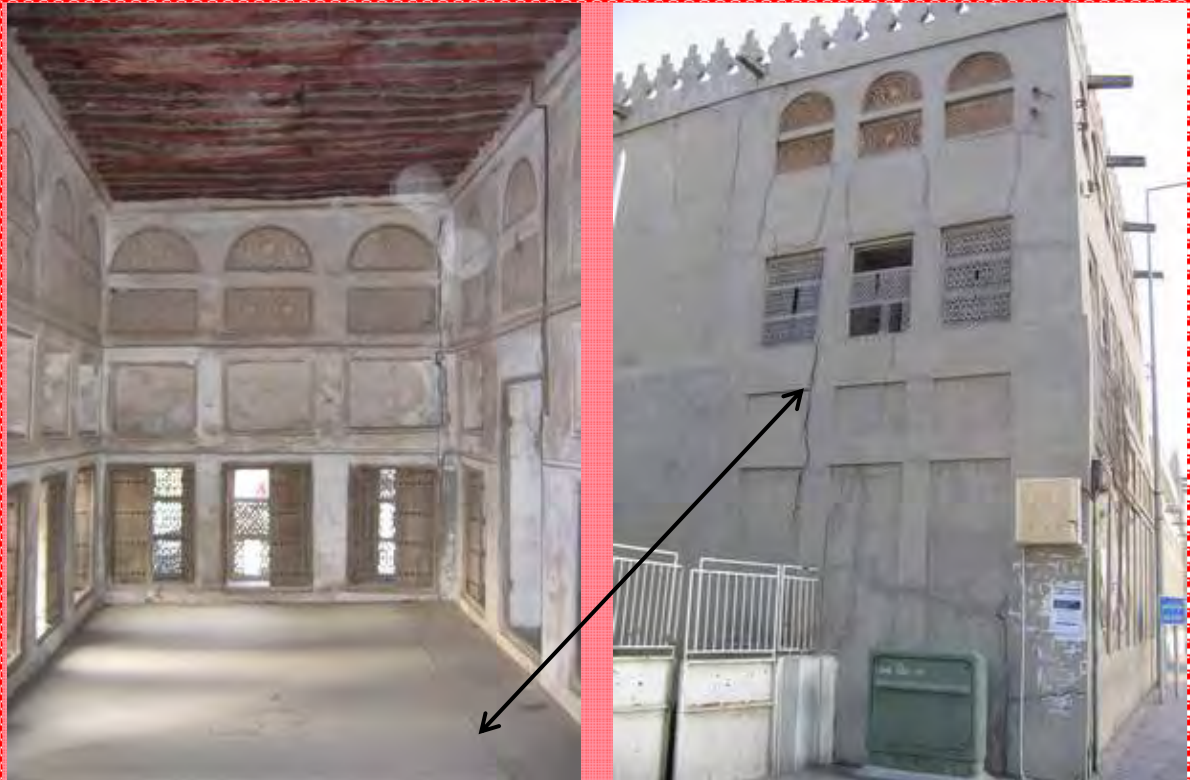
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Sheikh Salman House:
first floor room. Note
the corner longitudinal
crack. Note the external
network of continuous
longitudinal cracks
developed due to
foundations' differen-
tial
movement.

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Sheikh Salman House: first floor room. Note the corner longitudinal crack. Note the external network of continuous longitudinal cracks developed due to foundations' differential movement.

Implementation:

- In order to remedy those kind of cracks, structural intervention needs to be undertaken. There are usually two approaches for the remedy: the first is to create a continuous hinge between the load-bearing and the non-load-bearing walls in order to let each to settle and behave separately from the other; the second is to stitch the two elements together in such a manner that both would be forced to settle in the same rate of the other.
- If the first approach is adopted, a continuous joint between load bearing and non-load-bearing elements shall be provided along a vertical line of the façade. It should be noted that no wooden tie beams shall extend between both sides. This intervention could result in damaging most of the exterior and interior historic plaster in order to determine which tie beams that shall be exchanged. Joints shall be filled with lime mortar that would be compatible with the historic construction mortar. See mortar traditional mortar mixes in point 4.3. of this report.
- If the second approach is adopted, the intervention would be more focused on the foundation level. Foundations of such corner should be excavated, and well studied. The foundations of all sides of this corner shall be designed to sustain maximum load, included the areas that are non-bearing. A firm stitching between load bearing, and non-bearing walls shall be provided using adequate sizes of wooden tie beams. Wood shall be treated before us to prevent possible termite attack (See policy/strategy 2.2.7. in this report). In order to affirm a homogenous structural system, wooden tie beams shall be inserted internally and externally along the developed crack. Exterior plaster finished over newly inserted beams shall follow procedures explained in policy/strategy 2.2.13. in this report).

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Restoration Code 2: Three levels of principles/strategies

2.2.19. Restoring missing traditional balconies

Background

Those projecting balconies are probably initiated by the colonial architecture of the British administration, which may itself reflect the Portuguese *varanda*. It is noticeable whenever those balconies fall down, or for some reason dismantled, little attempts are currently devoted to restore them and reintegrate them into the structure.



**Projecting
traditional
balconies
in Muharraq**

Implementation:

- It is advisable to reinstate the traditional balconies wherever those vanished and there are enough evidences of their past existence. This will remedy the oddly looking façades of traditional building with a series of window and door openings, which contradicts with the architectural concept in Bahrain, where privacy of residential spaces is one of the most important design parameters.
- It is also advisable to introduce those balconies whenever necessity to open up *badgir* walls towards the street or the public space. This aspect was explained and studied in Policy/Strategy No. 2.2.5. of this report.
- In order to restore such balconies the following techniques shall be considered:
- Providing enough projecting beams to carry the dead load of the balconies and all possible life load expected. Wooden beams shall extend at the level of the intermediate floor beams or right above it to form a raised platform shown in the sketch below. Wooden beams shall be inserted into the wall with a length that should not be less than the projection.

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**Projecting
traditional
balconies
in Manama**

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- ◊ All the balcony structure shall be made out of good quality of wood (see types of traditional wood in point No. 4.4. of this report. Assemblage of wooden items shall be made out of tongue and groove joints with an addition of wooden elements. If necessary, brass screws could be used. No iron nails are allowed in the construction of those balcony in order to prevent their rusting in the humid climate of Bahrain.
- ◊ The direction of the shutters' louvers shall follow the local traditional direction, as explained by Kazerooni in the sketch below.

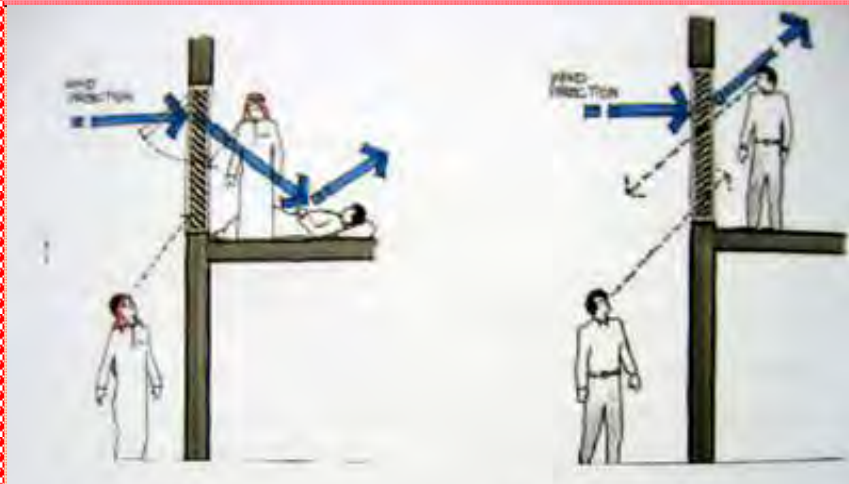


Fig. 46 In Gulf countries, the louvers are pointing downwards which pushes the air inside and blocks the view from outside.

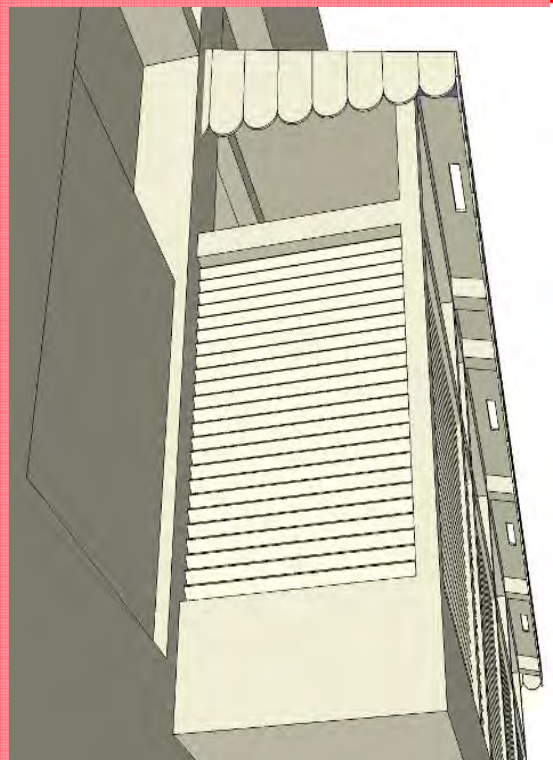
In western countries, the louvers are pointing up in order to drain rainwater and the person inside can look down through louvers

Shutter's
louvers by
Kazerooni
قواطع
عازلة ومشبكة
من قبل
خوراني

- ◊ Providing at least 4% slope for roof of those balconies.
- ◊ Inserting a flashing, preferably in brass, that seal the gap between the roof and the exterior wall of the building.
- ◊ Providing enough roof openings to discharge rainwater, as shown in the sketch below.

Reference:

Zoning, and planning principles strategies for the specific architectural details of projected balconies, and whether projections over façades are permitted. Policy/Strategy No. 2.2.5. in this report.



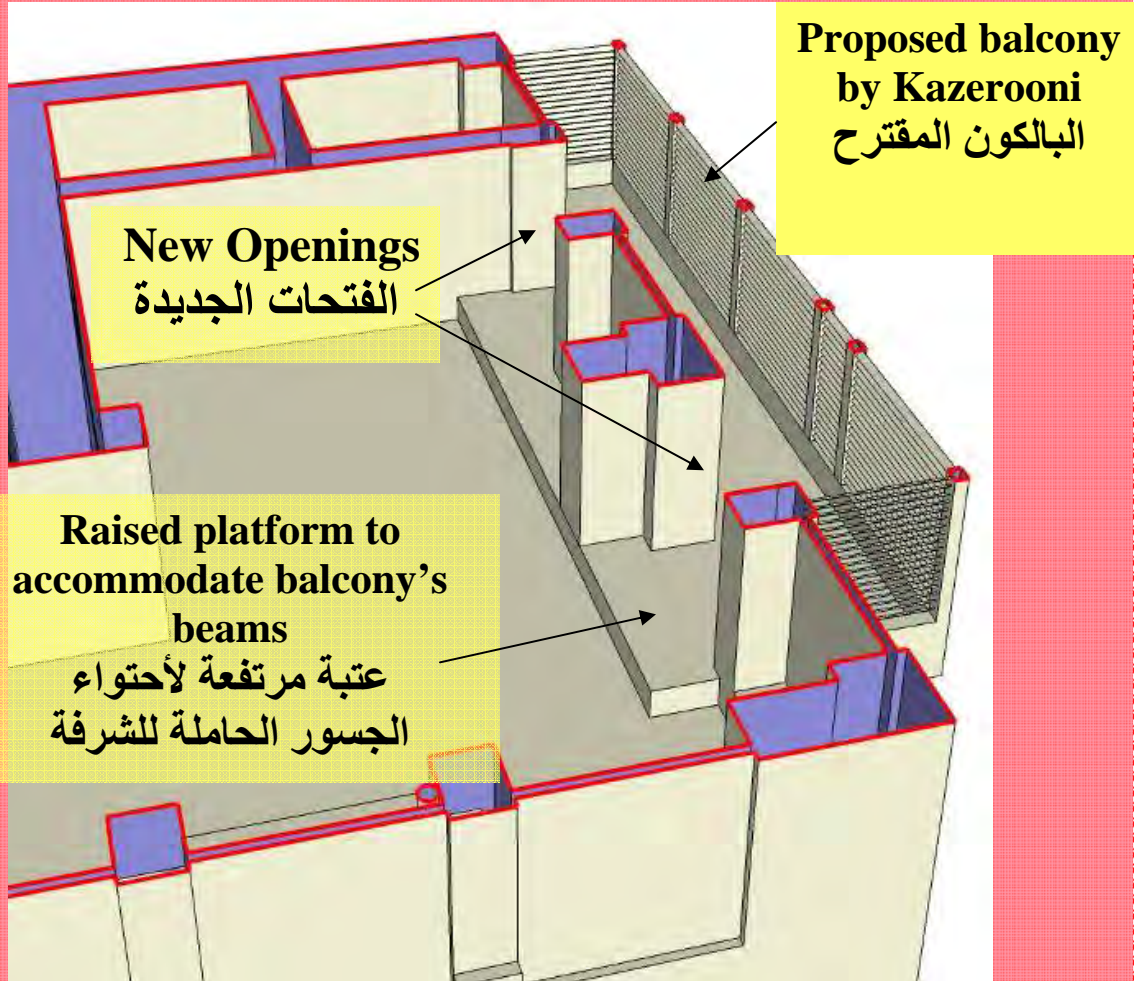
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Restoration Code 2: Three levels of principles/strategies

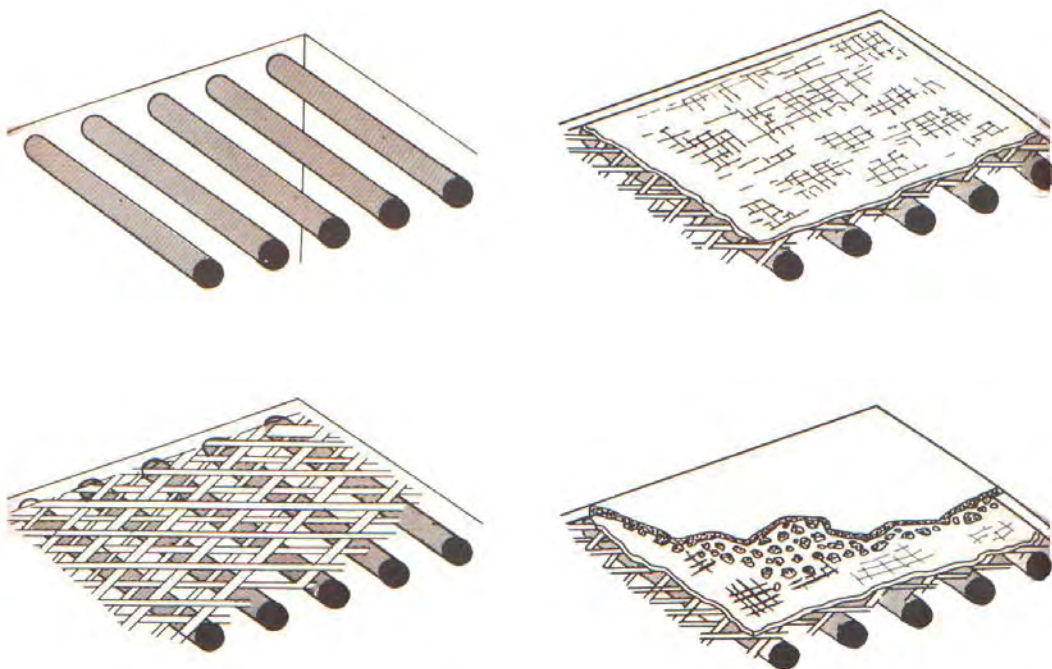
2.3. Principles/Strategies for thematic preservation

Introduction

This set of principles and strategies targets selected issues and/or buildings and/or structures that are currently in the public domain, and holds important values either historic, architectural, religious, social or others. They also involves some intangible qualities that the two cities, Manama and Muharraq, are traditionally known of, and they need to be preserved as memories throughout some abstract composition. The values subject of these principles/strategies are neither related to the buildings survey, thus not examined in the first category of principles/strategies, nor are they generic to all the public spaces to have them included in the second. They are specific values whose preservation and/or presentation would help to establish the link between the two cities and their past.

Policies/Strategies

The following are a set of policies/Strategies that are targeting Specific Preservation theme or issue.



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Restoration Code 2: Three levels of principles/strategies

2.3.1. “*Ferij*” representation

Background:

One of the very important aspect of the development of Bahraini cities is that this development is based on “a collection of villages in which family interests predominated over others.”. For example, “It is generally accepted that al-Muharraq is divided into nineteen zones, each named after a major tribal grouping.” However, “a tribal area is only very loosely defined on the ground.” (Yarwood, *al-Muharraq*, 11 and 16) The *Ferij*, which was social phenomenon that manifested itself throughout various historic phases in the urban fabric of Manama and Muharraq. The bases of this phenomenon is currently dissolved, and, thus, recently legally abolished. This policy/strategy aims to represents this phenomenon throughout some existing architectural elements that are related to the phenomenon’s urban setting. An example here is the *Ferij* gate that exist in Manama.

Implementation:

- The implementation of this policy/strategy requires the following studies and actions:
 - ◊ A historic research to indicate the urban construction of the city in terms of *Ferijs*.
 - ◊ A selection of the existing architectural elements that are related to the phenomenon of *Ferij*,
 - ◊ Conduct a historic research on the selected elements,
 - ◊ Conduct a photographic and architectural documentation of the selected elements,
 - ◊ Develop and implement a conservation/representation scheme for the selected elements that would be based on the conservation of its historic fabric, the distinction between the historic fabric and modern transformation/ modification, and to highlight the element into its urban surrounding,
 - ◊ Develop and implement a series of indications and/or signage that would put the selected elements in a comprehensive representation.



Remains of a *Ferij* Gateway in Manama
بقايا من مدخل فريج في المنامة

Reference:

See zoning, legal and planning principles/strategies for permitted intervention in those public architectural elements.

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Remains of a *Ferij* Gateway in Manama
بقايا من مدخل فريج في المنامة

Restoration Code 2: Three levels of principles/strategies

2.3.2. Recent Past Significance

Background:

One of the danger to focus on traditional buildings is to neglect a very important phase in the History of Bahrain, and specially in the city of Manama, and that is the one related to the post 1930's architecture, or what is referred here buildings of the recent past. Examples of those buildings are the Court, the Movie Theatres, the Post Office, and the newly introduced Hotel buildings such as the Bahrain Hotel. Those buildings were built mostly on the periphery of the historic town when the city expanded towards the North on reclaimed lands. Many of those buildings started to be demolished, or heavily remodeled without recognizing the historic importance of the historic fabric lost forever. Most of them cannot sustain their original function, including the old courthouse that is not longer in use, and a new building is replacing it. Another example is the post office in downtown Manama, that is being rehabilitated to be house a police station. It should be noted that these buildings held special qualities in their construction systems that are making them today quite significant. They also consist a transitional phase between the traditional architecture and the one that is practiced today. Therefore, if those buildings are lost, the link between the past that this project is targeting to protect and save and the present will be lost with them. The following are some photographs of important buildings of the recent past:



سينما أوال او مسرح لولو (الماضي والحاضر) (Awal or Lula Movie Theatre (Past and Present))

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Bahrain Hotel (Past and Present)
فندق البحرين (الماضي والحاضر)

Implementation:

- The implementation of this policy/strategy requires the following studies and actions:
 - ◊ A historic research to indicate the importance, the history, the current ownership, the current urban context of such buildings.
 - ◊ Conducting a photographic and architectural documentation of selected buildings,
 - ◊ Identifying architectural and decorative elements that should be subject of in situ conservation, and should be integrated in the new rehabilitation program,
 - ◊ Developing a rehabilitation program that are suitable to the interior spaces of the buildings, respecting the values of the fabric, permitted by the zoning and urban policies and strategies, and emphasize on an adequate maintenance plan,
 - ◊ Developing and implementing a series of indications and/or signage and/or publications that put the selected buildings in their historic settings.
 - ◊ Removing harmful additions and replacing missing parts harmoniously with the whole, but distinguishable at the same time. Compatible building technique shall be followed in the replacing the removed reinforced concrete elements. No, or minimum, harm shall be allowed to the historic fabric.
 - ◊ If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings,
 - ◊ Any addition work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp.
 - ◊ If rehabilitation is adopted (buildings subject to 2.1.3.-2.1.7.), reversible techniques should be used in any additions, modifications and changes, except where this is impracticable for reasons of dire structural necessity.



Awal or Lula Movie Theatre: Existing conditions of the seating rows and the projection machines :

Reference:

See zoning, legal, economic and planning principles/strategies for permitted interventions.



Court House (Past and Present)
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Restoration Code 2: Three levels of principles/strategies

2.3.3. Representations of selected archaeological remains

Background:

Bahrain is full of interesting archaeological remains, and most of them are located under the current city. It would be a mistake to neglect the living part of the city for the purpose of revealing such remains, as this will disrupt the existing urban life. However, the idea is to integrate a selection of these remains into the current fabric in a way that it would not affect the function of the city.

There are many historic records that are pointing to the existence of some important archaeological remains, and those could be a guidance for a focused excavation whenever possible. An example is Yarwood's account on Muharraq's "coast battery" that is not shown on historic maps, but "fortifications to the north are shown on the Brucks and Rogers maps of 1825." (Yarwood, *al-Muharraq*, 13) Quoting 1865's Palgrave description of al-Muharraq (in *Travels in Arabia*, 1865), Yarwood refers some fortifications or walls that protected Muharraq from the North side.

Subterranean historic structure, whether revealed or still to be excavated, can shed very important information about the historic evolution of the two cities. One example of such structures are the city wall of al-Muharraq, which presumably bordered the northern side of the city, as shown in the 1825 map, and as described by Palgrave in his 1865 accounts. If such wall existed, there must be some remains of it that could be either located in public or private properties. It would be important to reveal sections of this wall as testimony of this historic phase, and to relate it to the current urban fabric. This is a way to link the city to its history.



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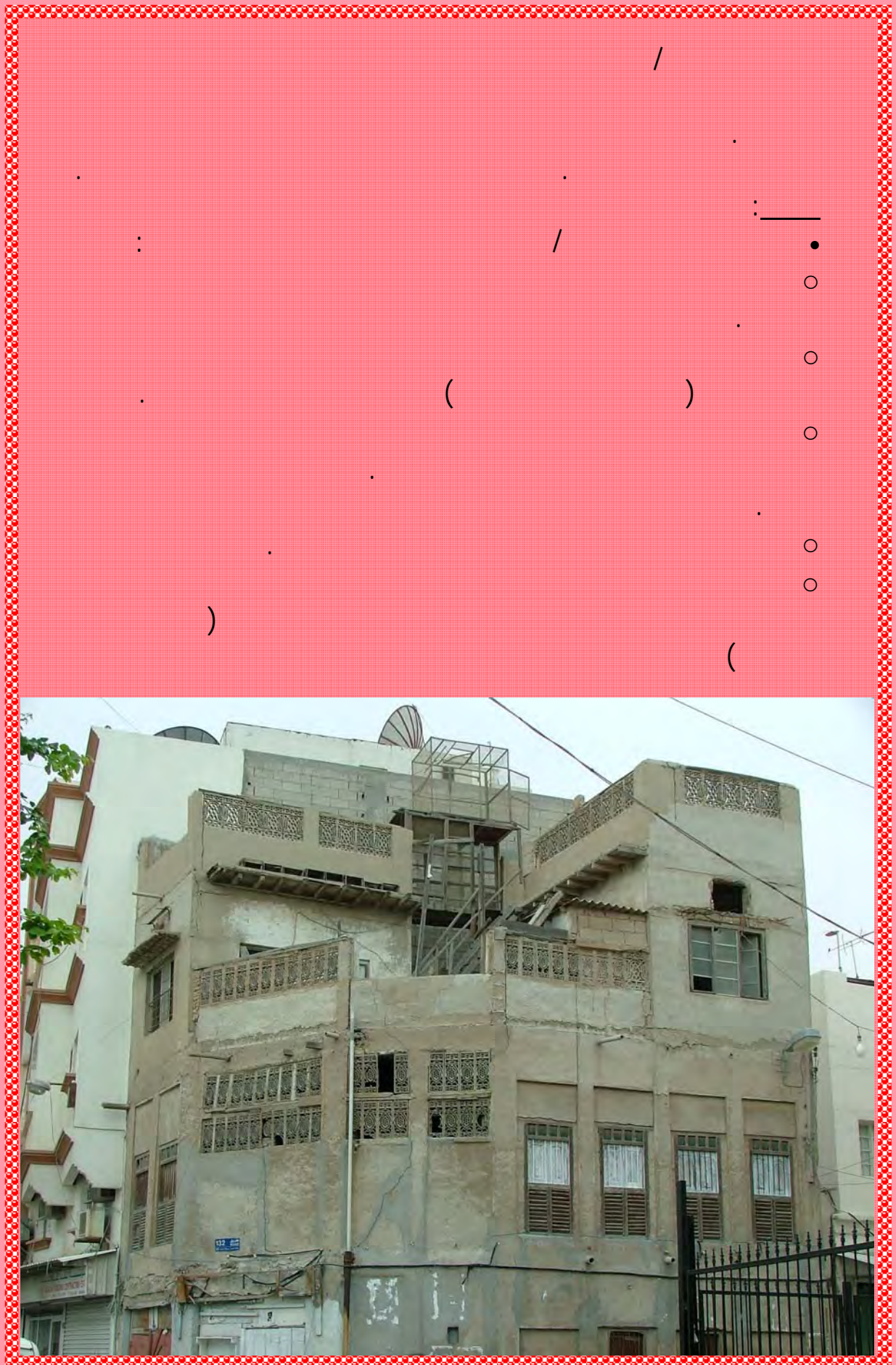


This policy/strategy aims to represents selected sections of some important subterranean historic structures that would help in inking the city to its history. this phenomenon throughout some existing architectural elements that are related to the phenomenon's urban setting. An example here is the *Ferij* gate that exist in Manama.

Implementation:

- The implementation of this policy/strategy requires the following studies and actions:
 - ◊ Conduct historic research on the existence of such elements, and to indicate their possible current locations.
 - ◊ Check on the ground the locations of such structures with the use of non-destructive equipment (i.e. using magnetometer), and investigate the possibility of limited archaeology.
 - ◊ Inquire about the means to preserve sections of the revealed elements that would indicate their typology and their role in the past. Other un-important sections shall be back-filled.
 - ◊ Develop an action plan for the conservation of the excavated section.
 - ◊ Develop a design to incorporate the revealed conserved section into the current urban context of the city in such a way that it would explained and related to the its past shape, function, and history (i.e. through signs).





Restoration Code 2: Three levels of principles/strategies

2.3.4. Representations of the historic city/sea relationship

Background:

One of the core reasoning of existence of the Bahrain is the country's relationship with the sea. Such notion is currently fading away with the rapid land reclamation, and privatization of the properties along the sea shore. In fact, with the current rate of land reclamation, the main Island of Bahrain will soon meet Muharraq. The city/sea relationship should be preserved, and its historic evolution shall be represented throughout selected related elements. Examples of such elements, or notions that could be represented are the fishing piers, docks, various sea-shore lines, and ports. Another example is to represent the 1930's rotating causeway that connected Manama to Muharraq.



Right: The northern sea shore of Manama that is currently almost one kilometer inland.

Left: The steel causeway built in the 1930's to connect Manama and Muharraq.

This causeway is no longer existing and new concrete bridges replace it.

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Implementation:

- Conduct historic research on a selected elements that are related to city/sea relationship,
- Recover as many fragments as possible from the vanished element, and its historic photographs, such as the steel items of the causeway,
- Attempting to create a total or partial reconstruction of the fragments as representation of the selected elements. The product could either be re-used or to be treated as historic public art. For an example, the decision to either partially or totally reconstruct the historic rotating bridge of the Manama/Muharraq causeway would depends on the available fragments and the possibility to re-create it in its location. The use of the re-constructed elements would, then, be determined according to the urban needs.

Reference

See zoning, legal, and planning principles/strategies for permitted interventions.

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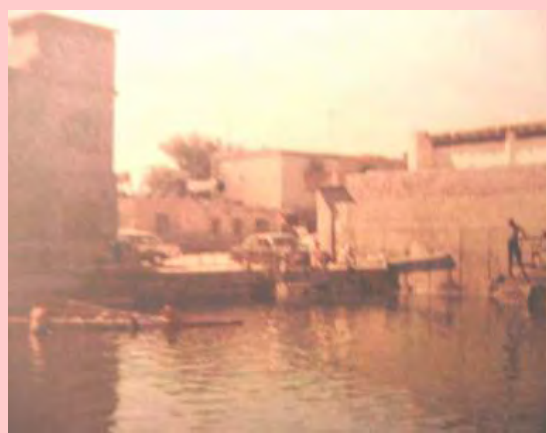


Restoration Code 2: Three levels of principles/strategies

2.3.5. Representations of the historic city/desert relationship

Background:

The two cities had experience a strong historic tie with the desert for various practical reasons. This aspect is more obvious in the case of Manama than it is in the case of Muharraq. This city/desert relationship had its effect in shaping some aspects of the urban pattern the two cities, and the architectural compositions of its buildings. This relationship could be represented through various methods in the current cities. Example of the elements that could be highlighted and represented is the trails that linked the city fabric with the surrounding natural water springs, i.e. *adhary* and *um al-shu'um*, that are located in the desert outside the city.



Implementation:

- Conducting a historic research to identify the desert elements which were traditionally used by the inhabitants of Manama and Muharraq, and study the how the trail to reach to those elements were connected to the urban fabric of the two cities.
- Select some of those elements which had the most impact in the historic development of the two cities, i.e. a trail to *adhary* spring became an axis along which the city developed.
- Developing a rehabilitation program for the selected elements that would be suitable to its historic fabric, and that would offer an attraction for the inhabitants and the visitors of the two cities. Visitor centers, and management plan shall be encountered in the rehabilitation projects.
- Developing a series of information and signage panels in the public spaces nearby the selected desert elements, from which trips to reach them could be originated.
- Including such important desert assets into the tourist's maps and guidebooks of Bahrain

Reference: See zoning, legal, and planning principles/strategies for permitted interventions. See also article written by Ehsane Abdel-Qudus, *Ihya' al-'uyun al-tabi'iyya* (the revitalization of water springs of Bahrain), Conference of MOMAA, Manama, 2006.

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Restoration Code 2: Three levels of principles/strategies

2.3.6. Representations of selected outstanding historic events, figures, or places

Background:

These representations go along the efforts initiated by the Center of Shaikh Ibrahim in transforming some of the important old houses to museums or cultural centers. This projects need to link the surrounding community with the urban fabric in order to strengthen a feeling of belonging throughout the members of the community, and to imprint the history of Bahrain on the urban fabric of its cities. There are already many examples for policy/strategy that started to appear in Muharraq such as the Abdullah al-Zayed Press Heritage House, and Mohammed Bin Faris Music House undertaken by Shaikh Ebrahim Bin Mohammed al-Khalifa Center for Culture and Research. It is reported that more of such projects are scheduled for implementation by the same Center such as a pearl museum in al-Siyadi House, and Crafts museum in Bayt Mattar.



Abdullah al-Zayed Press Heritage House

بيت الصحافة التراثي عبدالله الزايد



Mohammed Bin Faris Music House

بيت الموسيقى محمد بن فارس

Implementation

- Encouraging the endeavors already started by Shaikh Ebrahim Bin Mohammed al-Khalifa Center for Culture and Research to cover various other historic topics, important figures, and/or events that are related to the history of Bahrain.
- Respecting the Policies/Strategies 2.1.1.-2.1.8 assigned for buildings, and Policies/Strategies 2.2.1-2.2.19 that control implementation processes.
- Respecting the zoning and planning regulation in such rehabilitation projects, as they all tend to introduce cultural activities, not necessarily adopted by the community that surrounds the selected buildings.

Reference

See zoning, legal, and planning principles/strategies for permitted interventions.

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2.3.7. Representation of selected traditional and/or religious precessions and festivities

Background

There are many traditional and religious buildings and open spaces which were established in historic centers of Manama and Muharraq to house important public events, such as the weekly market areas, the religious processions in *ma'tams* and or *maqam* and others, and the majlis of a certain neighborhood. Since most of the Bahraini started to move out to the periphery of the cities, and apparent gentrification of the two historic centers started to take place, those buildings and open spaces will loose their essence of their establishment, will no longer be used, and will soon fall into ruins, or their memories will be completely lost.



**Traditional
weekly
markets in
Manama (from
Wheat croft)**

قرب الميناء

Implementation

- Conducting a historic research to identify buildings and open spaces which were used as an important space to celebrate an event or to interact in a certain economic or social activities. traditionally used by the inhabitants of Manama and Muharraq. It is important to position such spaces or building in their traditional setting, so that their role could be grasped.
- Select some of those elements which had the most impact in the historic development of the two cities, i.e. an essential weekly market, a major *majlis* building, and others.
- Developing a rehabilitation program for the selected spaces or buildings that would be suitable to its historic fabric, and that would offer an attraction for the inhabitants and the visitors of the two cities. Visitor centers, and management plan shall be encountered in the rehabilitation projects.
- Developing a series of information and signage panels in the selected spaces and building.
- Including such important assets into the tourist's maps and guidebooks of Bahrain

Reference

See zoning, legal, economic, and planning principles/strategies for permitted interventions.

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مجلس في المحرق
a family majlis in Muharraq

Restoration Code 2: Three levels of principles/strategies

2.3.8. Conservation and maintenance of historic trees

Background:

During the site visits in Manama and in Muharraq, it was noticeable that there are very few trees that could be found in public space. It is not clear whether traditionally no plantation was considered in the public spaces. However, it is reported that in 1937 a total of 503 trees were planted in the roads of Manama and Muharraq (Muraikhi, p. 89). It is important to investigate the status of these trees and to assess their conditions. Those trees represent an important experience in landscaping the public spaces. Such experience needs to be assessed, and its assets should be conserved. The aim of this policy/strategy is to incite the introduction of trees in Manama and Muharraq in order to upgrade the status of their public spaces.

Implementation:

- Surveying all trees located in public spaces, identifying their exact location, their approximate age, their relation with the surrounding built fabric and open spaces, their condition.
- Developing a maintenance plan for watering, trimming and the general cleaning of those trees in accordance to related specifications.
- Assuring that water used in watering those trees are not reaching the foundations of surrounding buildings, especially those significant ones.
- Assuring that the roots of the tree will not damage the foundations and the exterior walls of the surrounding buildings.
- Considering integrating the existing trees into a overall strategy for the landscaping of open spaces, and public streets.

Reference

See zoning, legal, economic, and planning principles/strategies for permitted interventions.



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Urban Design Projects for Traditional Areas in Bahrain.***

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